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SYNTEX

CERTIFIED MAIL -- RETURN RECEIPT REQUESTED # P 220 411 216

19 August 1997

United States Environmental Protection Agency
Region VII
726 Minnesota
Kansas City, KS 66101

ATTN: Mr. Steven Sanders

RE: Geoprobe Survey Final Report

Dear Mr. Sanders:

Enclosed please find the Geoprobe Survey Final Report for the Syntex Agribusiness, Inc. Verona, Missouri Remediation Activities. The geoprobe survey was completed in accordance with the requirements specified in the Operable Unit 2 Implementation Plan and the Administrative Order on Consent for Response Actions between Syntex Agribusiness, Inc. and the U.S. Environmental Protection Agency (Docket No. VII-97-F-0016).

Two copies of the Geoprobe Survey Final Report and the associated cover letter have been provided for you and two additional copies have been sent to Mr. Jerry Foster, MDNR.

Should you have questions concerning the attached information, please contact me at (417) 868-3438.

Sincerely,
SYNTEX AGRIBUSINESS, INC.

Nancy Luxton
Environmental Specialist

Enclosures

cc: Mr. Jerry Foster; MDNR
Mr. Chuck Hungerford; Heller, Ehrman, White & McAuliffe

GEOPROBE SURVEY REPORT
OU2 IMPLEMENTATION PLAN
Syntex Agribusiness, Inc. Verona, Missouri Remediation Activities

This report summarizes the activities and results of a geoprobe survey conducted to site additional monitoring wells at the Ducoa (formerly Syntex/Ducoa) facility (the facility), Verona, Missouri. The work was conducted in accordance with the requirements of paragraph 30 of the Administrative Order on Consent for Response Actions between Syntex Agribusiness, Inc. (Syntex) and the U.S. Environmental Protection Agency (EPA)(Docket No. VII-97-F-0016) finalized July 15, 1997, and the OU2 Implementation Plan (OU2 IP) dated May 1996.

1.0 INTRODUCTION

A geoprobe survey was conducted to determine suitable locations to site an additional upgradient and downgradient monitoring well in the Spring River floodplain at the facility.

The geoprobe survey was conducted by Layne-Western, Inc. through its subcontractors, Environmental Probing Services (EPS) and Plains Environmental Service (PES), on July 14, 15, and 17, 1997. A change in subcontractors from EPS to PES was necessary during the field work to insure compliance with permitting requirements of DGLS. EPS conducted the survey in the upgradient well location and began the floodplain downgradient survey, completing 3 upgradient probe locations and 7 downgradient locations. PES repeated six of the downgradient probe locations previously investigated by EPS, and completed the floodplain survey, having probed 12 downgradient locations. Completed upgradient and downgradient Geoprobe locations are depicted on Figure 1.

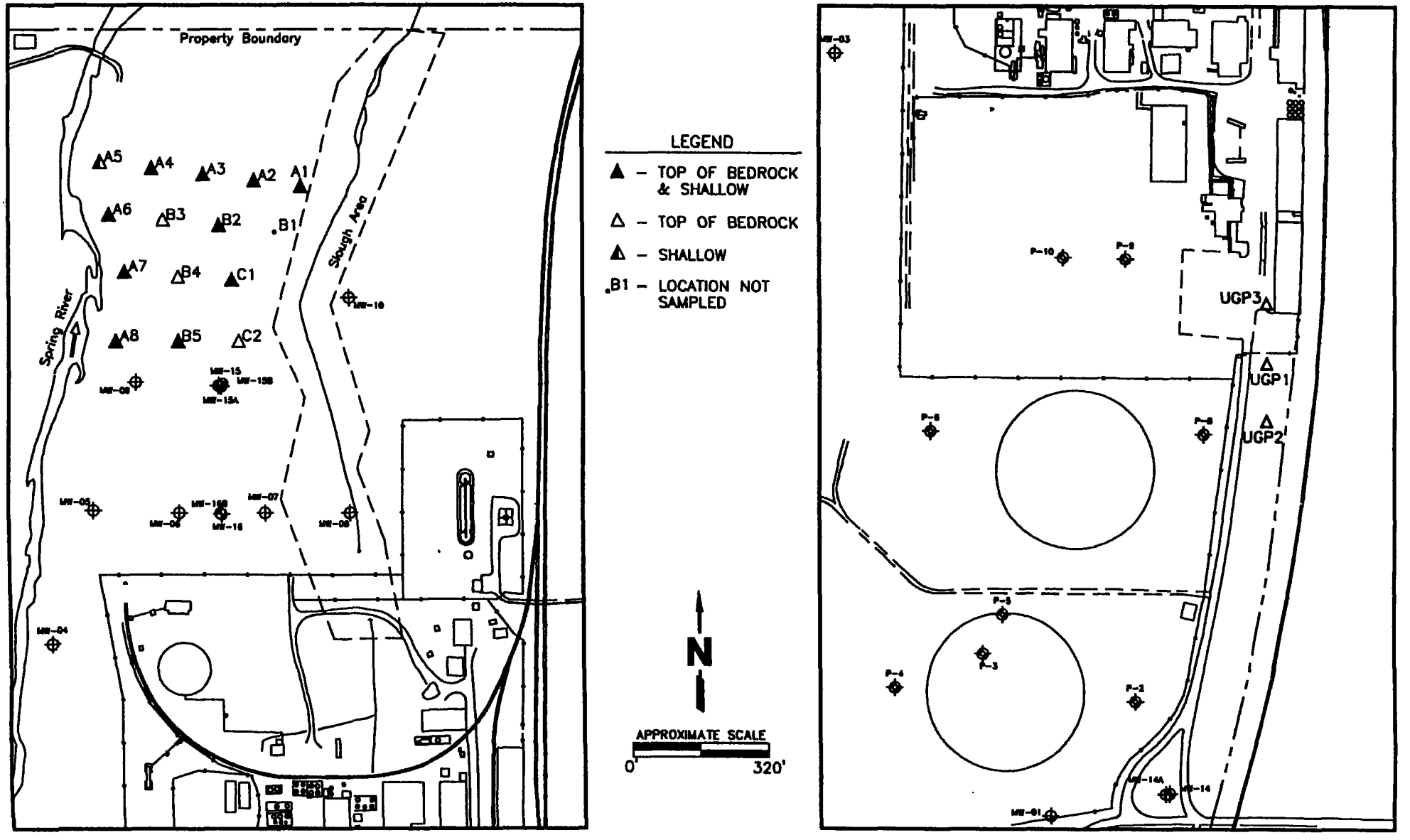
Representatives of MDNR were on-site for the three days of geoprobe work, and observed all investigation activities. Agency personnel involved were Mr. Jerry Foster, MDNR Hazardous Waste Program, and Mr. Joe Gillman, MDNR Division of Geology and Land Survey. All issues related to the Geoprobe investigation, and all preliminary field data, were discussed with the on-site representatives.

2.0 FIELD AND SAMPLING METHODOLOGY

Both EPS and PES utilized a 5400 Series Geoprobe® (Geoprobe) unit equipped with a gas chromatograph (GC) mobile laboratory for real-time analysis of groundwater samples. The three upgradient Geoprobe locations were sampled at the unconsolidated/bedrock interface. Downgradient floodplain locations were sampled either at the top of the bedrock, or at both the top of the bedrock and at a shallower horizon below the zone of saturation, in accordance with the OU2 IP. Sampling was performed as specified except in holes where insufficient groundwater could be produced or where too little stratigraphic separation (± 4 feet) existed between the upper and lower sampling horizons to prevent mixing of groundwater; this latter condition resulted from shallow bedrock or the necessity of raising the probe rods several feet above bedrock in order to encounter sufficient groundwater for sampling. These exceptions occurred at locations A3, A5, and A7 during EPS probe work, and at location A6 during work by both EPS and PES. Once groundwater sampling was completed at each location, the Geoprobe hole was filled with fine bentonite chips and hydrated.

Groundwater collection procedures by EPS involved driving 4-foot lengths of 1-inch diameter Geoprobe rods to refusal utilizing an expendable aluminum bit, and raising the rods an initial 2 feet to allow for groundwater entry.

FIGURE 1
GEOPROBE SURVEY LOCATIONS
REMEDIATION ACTIVITIES – SYNTEX AGRIBUSINESS, INC.
VERONA, MISSOURI



GPPBFIG1 (8/18/97)

Following a few minutes waiting time, if groundwater had not entered the rods, the rods were raised an additional 2 feet and the procedure repeated until sufficient water could be obtained for sampling (20 milliliters minimum). EPS utilized 3/8-inch tygon tubing and a permanently mounted peristaltic pump to obtain groundwater samples, with a new section of tubing used for each sample obtained.

Once the top of bedrock sample was obtained, EPS raised the rods to the uppermost gravel horizon occurring below 10 feet depth (the approximate depth of soil saturation), as noted during initial penetration. A minimum of four liters of groundwater were pumped from the upper horizon to insure purging of the rods and groundwater in the well. The increased water production in the higher horizon and use of a small peristaltic pump resulted in "micropurging" of the horizon, i.e., the increased quantity of water produced from the upper horizon combined with the slow pumping rate resulted in only groundwater from the upper horizon being purged and sampled.

Groundwater collection techniques by PES differed from those employed by EPS. PES drove 3-foot, 1.25-inch diameter Geoprobe rods, also with an expendable aluminum bit, to a depth of 12 feet and collected groundwater using 3/8-inch tygon tubing and a small, drill-operated peristaltic pump. New tubing was used for each sample. In general, sufficient groundwater was present in the upper sampling zone to allow immediate collection of a groundwater sample. To collect groundwater from the top of bedrock zone, PES drove a second Geoprobe hole to refusal using additional rods. After approximately five minutes waiting time, sufficient water could be obtained for sampling from the deep zone. All rods and equipment were decontaminated between holes.

All groundwater samples were analyzed by modified EPA Method 3810/8010 using the mobile GC for acetone (ACE), dichloromethane, or methylene chloride (DCM), and chlorobenzene (CBZ). Initial, unverified results were available after approximately 30 minutes, and were relayed to the Syntex representative and the MDNR representative. Several duplicate groundwater samples were collected during the floodplain downgradient phase of the work by Syntex for verification by standard laboratory mass spectroscopy/GC analyses.

Additional details concerning equipment, sampling procedures, analytical techniques, and QA/QC methodology are available in the attached reports by EPS (Attachment A) and PES (Attachment B).

3.0 GEOPROBE RESULTS - INVESTIGATING THE UPGRADIENT WELL LOCATION

Three of the planned five Geoprobe locations were tested in the area originally proposed for the new upgradient well (see Figure 1). Bedrock at this location varied from 31 feet below land surface (ftbls) to 40 ftbls. Groundwater samples from the top of the bedrock were collected, and the Geoprobe rods had to be raised from 4 feet to 8 feet to obtain sufficient water for sampling. No duplicate samples were collected from this location.

Based on historical groundwater potentiometric maps (included as Attachment C), all locations sampled definitely occur in hydraulically upgradient locations with respect to plant operations. However, analytical results of the sampling indicated the presence of acetone, chlorobenzene, and methylene chloride as summarized in the following Table 1:

Table 1: RESULTS OF UPGRADIENT GEOPROBE INVESTIGATION					
Sample Site	Acetone (µg/L)	Chlorobenzene (µg/L)	Dichloromethane (µg/L)	Depth to Bedrock (Ft)	Comments
UPG-1	19.4	1.0	< 1	41.0	No discolor or odor
UPG-2	24.2	< 1	3.3	36.0	No discolor or odor
UPG-3	79.2	< 1	8.2	30.0	No discolor or odor

The actual presence of acetone is highly doubtful, considering the rapid natural attenuation of acetone in the environment, the hydraulically upgradient location of the wells, the absence of acetone in recent groundwater monitoring at the facility, and the absence of possible sources. No industries upgradient of this location in the town are known to use acetone, acetone is not used at the site, and no recent spills of acetone-containing materials along the railroad are known to have occurred. EPS states in their report (page A2-3) that the "positive" identification of an analyte is based only on comparison with specific standards used, and is not 100% accurate due to co-elution of some compounds during the field GC analysis. Therefore, it is more likely the acetone detections by the field GC is related to a different, unrelated compound co-eluding at the same time as the standard used for calibration. Concentrations of CBZ and DCM ranging from below reporting limit (< 1 µg/L) to trace amounts support the generally upgradient location of the sampling.

4.0 RECOMMENDATION REGARDING A NEW UPGRADIENT WELL

The original intent of the Geoprobe survey was to site a new upgradient well to address concerns regarding the suitability of the existing upgradient wells MW-14 and MW-14A. When the IP was initially proposed in 1994, monitoring data indicated that MW-14 and MW-14A contained contaminants at high levels. Because contaminants appeared to be present in these existing wells, a decision was made to install a new upgradient monitoring well in a different location, and to conduct a geoprobe survey to confirm the absence of chemical contaminants at the proposed location of the new well. Since that time, groundwater sampling of MW-14 and MW-14A has been conducted each quarter for the past three years. Additionally, a new upgradient monitoring well (IS-6) was installed in a hydraulically upgradient location apart from MW-14 and MW-14A as part of the Syntex/DuCoa/MDNR NPDES settlement agreement requirements. Since 1994, sampling results for MW-14, MW-14A, and IS-6 have shown no VOCs attributable to groundwater contamination present above 5 µg/L. Monitoring data for MW-14, MW-14A, and IS-6 are summarized in Table 3. This data, showing the absence of contamination, justifies continued use of MW-14 and MW-14A as functional upgradient monitoring wells. In addition, well IS-6, the new NPDES upgradient monitoring well, is capable of monitoring upgradient groundwater for both NPDES and OU2 purposes, if upgradient groundwater from an additional monitoring well is required. Considering these factors, there does not now appear to be justification to install a fourth upgradient monitoring well for OU2 monitoring purposes, or for performance of any additional upgradient geoprobe surveys under the IP. Thus, Syntex proposes to utilize MW-14 and MW-14A for the upgradient monitoring well(s).

Table 2: RESULTS OF UPGRADIENT GROUNDWATER SAMPLING 1994 - 1997

RESULTS FOR VOCs ONLY, CONCENTRATIONS IN µg/L (ppb)												
WELL	**1994**			**1995**		**1996**			**1997**			
	Feb	May	Nov	Mar	May	Oct	Nov	Dec	Jan	Feb	Mar	Jun
MW-14A	ND	ND	10 DCM	ND	ND	ns	ns	ND	ns	ns	ND	ND
MW-14	ND	ND	6 DCM	ND	7 DCM	ns	ns	ND	ns	ns	ND	ND
IS-6	well not installed					ND	ND	ND	ND	ND	ND	ND

Notes:

(1) Summary of analyses is for volatile organic compounds (VOCs)

(2) Concentrations expressed are in µg/L (ppb)

(3) ND = Not detected above laboratory reporting limit (5 to 10 µg/L)

(3) DCM = Dichloromethane (methylene chloride)

(4) DCM detections noted are attributed to external contamination sources

(5) Shaded areas indicated not sampled - "ns" = not sampled

5.0 GEOPROBE RESULTS - INVESTIGATING THE DOWNGRADIENT FLOODPLAIN AREA

Through the efforts of both EPS and PES, 14 Geoprobe sampling locations along the three transects (A, B, and C) depicted in the IP were tested, with locations illustrated on Figure 1. As provided on page 2-5 of the IP, "the objective of the transects is to identify the downgradient limit of groundwater contamination so that new downgradient OU2 well(s) can be installed near, but slightly beyond, the leading edge of groundwater contamination to define a clean perimeter." As required by the IP, the survey was performed in a staged approach starting with transect A. Groundwater was sampled at two stratigraphic levels in accordance with the IP protocol. EPS sampled the first 7 locations (A1 through A7) prior to PES arriving and conducting the remainder of the investigation. PES was tasked with repeating the sampling of five transect A locations (A2, A3, A4, A6, and A7) for QA/QC continuity purposes, and to verify preliminary results reported by EPS. Although not required by IP protocol, Syntex collected duplicate groundwater samples at locations A2, A3, A4, A6, A7, B4, and B5 as an additional QA/QC check of both EPS and PES field GC analytical results. Of these collection locations, top-of-bedrock samples from locations A2, A4, A7, B4, and B5 were analyzed for VOCs using EPA Method 2060. In the case of duplicate groundwater samples A4 and B4, the presence of high suspended sediment content resulted in too little water present for analysis; for these two samples, the sediment portion was analyzed. No unusual colors or odors were observed for any of the groundwater sampled. Analytical data sheets are included as Attachment D.

Bedrock in the floodplain was encountered from 13 to 40 ftbls, with a distinct area of deeper bedrock present in the south central portion of the sampled area (locations A8, B4, B5, and C1). Bedrock in the deeper area is greater than 35 feet deep. In the remaining northern portions of the sampled area, bedrock occurs from 13 to 23 ftbls, with the shallower depths closer to the Spring River. Soil lithology was generally consistent across the site, consisting of: upper, clay-rich soil; underlying, distinct gravel horizons one to four feet thick occurring between 7 and 14 ftbls; and a lowermost zone of mixed clay and gravel to bedrock. Distinct gravel zones were not encountered immediately atop bedrock; rather, one to two feet of clay-rich alluvium was usually present in this zone.

Historical groundwater level measurements in the existing downgradient monitoring wells indicate depth to water occurring 6.5 to 11.5 ftbls. Considering the lack of recent precipitation in the area, a depth of 12 ftbls was chosen for collecting the shallow groundwater sample to be sure sufficient water would be encountered. This stratigraphic horizon yielded readily-available water in sufficient quantities. Groundwater from this zone generally contained some amount of fine, suspended sediment. Groundwater from atop bedrock was obtained by raising the rods at least 2 feet following refusal, and waiting at least five minutes before attempting to collect the sample. This technique was successful in most instances, and yielded groundwater generally containing a substantial amount of fine, suspended sediment. No unusual colors or odors were observed for any groundwater sample collected.

Field analytical results varied between the EPS and PES surveys for the initial five, double-sampled, transect A locations. Acetone at concentrations from 3.5 to 45 µg/L was reported for all of the EPS sampling, in both shallow and deep samples, but was not detected at a reporting limit of 7 µg/L in any PES samples. Both EPS and PES reported dichloromethane detected, although the frequency and reported concentrations were higher for EPS samples. EPS reported DCM present in 9 of 10 samples

at concentrations of 1.5 to 17 µg/L; PES reported DCM present in 4 of 9 samples at concentrations of 1 to 4 µg/L. Chlorobenzene was not reported as detected by either EPS or PES for any of these initial samples.

No acetone was detected in PES sampling of either shallow or deep groundwater for the remaining transect A, B, and C locations. For all shallow groundwater samples over the entire grid, PES reported a single DCM detection (1 µg/L) at location A3; neither ACE nor CBZ were reported as detected for any shallow groundwater sample. For top-of-bedrock samples, DCM was detected at most locations (9 of 12) with concentrations ranges of 1 to 19 µg/L; the highest concentration of DCM was reported for location A8 on the southernmost transect line. Chlorobenzene was detected in only 3 of 12 deep groundwater samples, with concentrations ranging from 2 to 6 µg/L. Of note, detections of CBZ only occurred in top-of-bedrock samples within the south-central, deep bedrock area.

Tables 3 and 4 list the results of the downgradient floodplain Geoprobe survey for the shallow and top-of-bedrock samples, respectively, and include results of the duplicate groundwater samples where analyzed. The results are also summarized in Figure 2 (shallow samples) and Figure 3 (top-of-bedrock samples). Suspect results are indicated by either italics or a question mark.

The absence of acetone as reported by PES sampling is in agreement with results of nine episodes of groundwater sampling conducted at the site over the past three years. A summary of the monitoring results for the downgradient wells adjacent to the downgradient geoprobe area is presented in Table 5. Acetone was reported once, and is considered spurious. As was the case for results from the upgradient sampling area, acetone detections as reported by EPS are considered artifacts resulting from the field analytical techniques employed. Three of the five geoprobe duplicate groundwater / sediment samples analyzed also report acetone detections. These reported detections are not readily explained, but are suspect in light of historical groundwater sampling. The absence of acetone as a real contaminant is supported by the absence of acetone in PES Geoprobe results for the entire downgradient survey area, a lack of source (acetone is not currently, and has not historically, been used as a raw material at the facility), the rapid natural attenuation of acetone in the environment, and the absence of acetone detections in normal groundwater sampling upgradient of the Geoprobe survey area.

The presence of dichloromethane is indicated by both Geoprobe and duplicate groundwater sampling, although the reported concentrations are very low (most less than 5 µg/L). DCM has also been sporadically reported in historical groundwater sampling (see Table 5), but was not detected at top-of-bedrock locations during 1997 sampling. The absence of DCM as a current or historic raw material used at the facility, combined with its rather widespread but sporadic apparent presence, suggest DCM should not be considered indicative of contamination emanating from historical facility waste operations, and should not be used to define extents of facility groundwater contamination.

Chlorobenzene, which is a known waste component of historical plant operations, should be considered indicative of the aqueous phase contamination to be defined by this study. Positive detections of CBZ occurred in both Geoprobe and duplicate groundwater samples in the southern portion of the Geoprobe study area, with concentrations ranging from 2 to 6 µg/L for Geoprobe samples, and up to 69 µg/L for duplicate groundwater samples.

Table 3: SHALLOW SAMPLE RESULTS - VERONA OU2 GEOPROBE SURVEY

GEOPROBE SAMPLE	GEOPROBE SAMPLE RESULTS (ug/L - ppb)						GROUNDWATER SAMPLE RESULTS (ug/L - ppb)			COMMENTS
	Acetone		Dichloromethane		Chlorobenzene					
	PES	EPS	PES	EPS	PES	EPS	Acetone	Dichloro-methane	Chloro-benzene	
A1 - 12'		*5.7*		*6.4*		ND <1				Suspect ACE presence & DCM quantity
A2 - 12'	ND <5	*5.7*	ND <1	*5.1*	ND <1	ND <1				Suspect ACE presence & DCM quantity
A3 - 13'	ND <5	*8.1*	1	1.5	ND <1	ND <1				Suspect ACE presence
A4 - 12'	ND <5	*9.9*	ND <1	2.3	ND <1	ND <1				Suspect ACE presence
A5 - 12'-12.5'		*3.5*		2.0		ND <1				Suspect ACE presence
A6 - 10.5'-12'		*20.4*		ND <1		ND <1				Suspect ACE presence
A7 - 10'-12'	ND <5	*45.3*	ND <1	*17.4*	ND <1	ND <1				Suspect ACE and DCM presence
A8 - 12'	ND <5		ND <1		ND <1					
B2 - 12'	ND <5		ND <1		ND <1					
B5 - 12'	ND <5		ND <1		ND <1					
C1 - 12'	ND <5		ND <1		ND <1					

NOTES:

1. Shaded area = not sampled
2. Italicized values are suspect in either presence or reported quantity
3. ND = Not Detected below indicated quantification/reporting limit

Table 4: TOP-OF-BEDROCK SAMPLE RESULTS - VERONA OU2 GEOPROBE SURVEY

GEOPROBE SAMPLE	GEOPROBE SAMPLE RESULTS (ug/L - ppb)						GROUNDWATER SAMPLE RESULTS (ug/L - ppb)			COMMENTS
	Acetone		Dichloromethane		Chlorobenzene					
	PES	EPS	PES	EPS	PES	EPS	Acetone	Dichloro-methane	Chloro-benzene	
A1 - 19'-23'		*16.0*		*3.2*		ND <1				Suspect ACE presence and DCM quantity
A2 - 22'-23'	ND <5	*23.4*	ND <1	*10.4*	ND <1	ND <1	< 10	< 10	< 5	Suspect Geoprobe ACE and DCM presence
A3 - 28'-29.5'	ND <5		2.5		ND <1					
A4 - 19'-21'	ND <5	*14.8*	4	2.1	ND <1	ND <1	S *120*	S *17* B	S < 17	Suspect ACE presence in G-Probe & "G-Water "
A6 - 16'-18'	ND <5		2		ND <1					
A7 - 17.5'-19'	ND <5		ND <1		ND <1		*39*	< 10	< 5	Suspect ACE presence in G-Water sample
A8 - 33'-35'	ND <5		*19*		ND <1					Suspect DCM quantity
B2 - 20'-22'	ND <5		*5*		ND <1					Suspect DCM quantity
B3 - 14'-16'	ND <5		ND <1		ND <1					
B4 - 35'-37'	ND <5		*3*		5		S *59*	S 12 EB	S 69	Suspect ACE & DCM presence in "G-Water"
B5 - 38'-40'	ND <5		1		6		< 10	<5	62	
C1 - 25'-37'	ND <5		1		2					
C2 - 18'-20'	ND <5		3		ND <1					

NOTES:

1. Shaded area = not sampled
2. Italicized values are suspect in either presence or reported quantity
3. ND = Not Detected above indicated quantification/reporting limit
4. "**S**" = Sediment portion of duplicate Groundwater Sample analyzed due to high sediment to water ratio (A4 and B4 samples)
5. "**B**" = Analyte also detected in Blank
6. "**E**" = Estimated concentration; below normal quantification limit

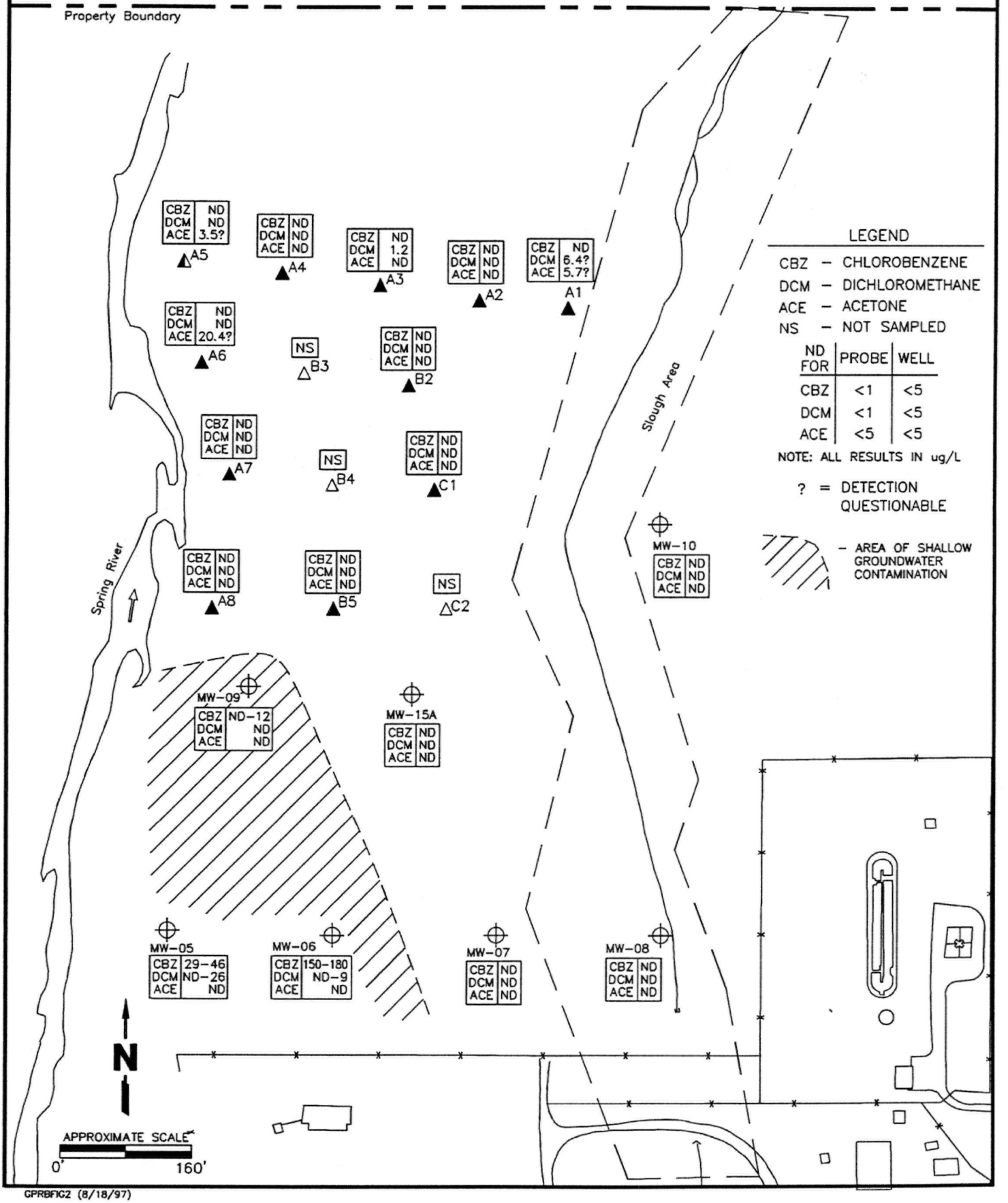
Table 5: RESULTS OF DOWNGRADIENT GROUNDWATER SAMPLING FOR VOCs 1994 - 1997 (ug/L)

WELL	1994			1995		1996		1997	
	Feb	May	Nov	Mar	May	Sep	Dec	Mar	June
MW-5	37 CBZ	28 CBZ	9 CBZ	27 CBZ	5 DCM	28-38 CBZ	31 CBZ 3 BNZ	44-46 CBZ 10-26 DCM ND-6 BNZ ND-10 TCA	29-31 CBZ
MW-6	150 CBZ 9 XYL	118 CBZ	91 CBZ 18 XYL 8 TOL 17 CDS	130 CBZ 11 XYL	160 CBZ 5 DCM 20 XYL 7 EBZ	160-190 CBZ 19-54 XYL 11-31 TOL ND-10 EBZ	120 CBZ 14 XYL 2 BNZ 2 EBZ	180 CBZ 9 DCM 11 XYL 5 TOL	150-160 CBZ 5-9 XYL ND-6 TOL
MW-7	6 DCM	ND	6 DCM	ND	ND	ns	ND	ND	ND
MW-8	ns	ns	ns	ns	ns	ns	23 DCM 30 ACE	ND	ND
MW-9	28 CBZ 11 DCM	14 CBZ	39 CBZ	46 CBZ	76 CBZ 5 DCM 13 XYL 10 TOL 27 EBZ	28 CBZ	27 CBZ	12 CBZ	7 CBZ
MW-10	ns	ns	ns	ns	ns	ns	18 DCM	ND	ND
MW-15A	ND	ND	15 DCM	ND	ND	ns	18 DCM	ND	ND
MW-15B	36 CBZ 9 DCM	23 CBZ	5 CBZ 15 DCM	16 CBZ	32 CBZ	45 CBZ 5 XYL 5 TOL	25-29 CBZ	26 CBZ	28 CBZ
MW-15	ND	ND	5 DCM 21 CME	ND	7 CBZ 5 DCM 13 XYL	ns	19 DCM	ND	ND
MW-16	ND	ND	ND	5 CBZ	ND	ns	ND	ND	ND
MW-16B	ND	ND	5 DCM	ND	ND	ND	ND	ND	ND

Notes:

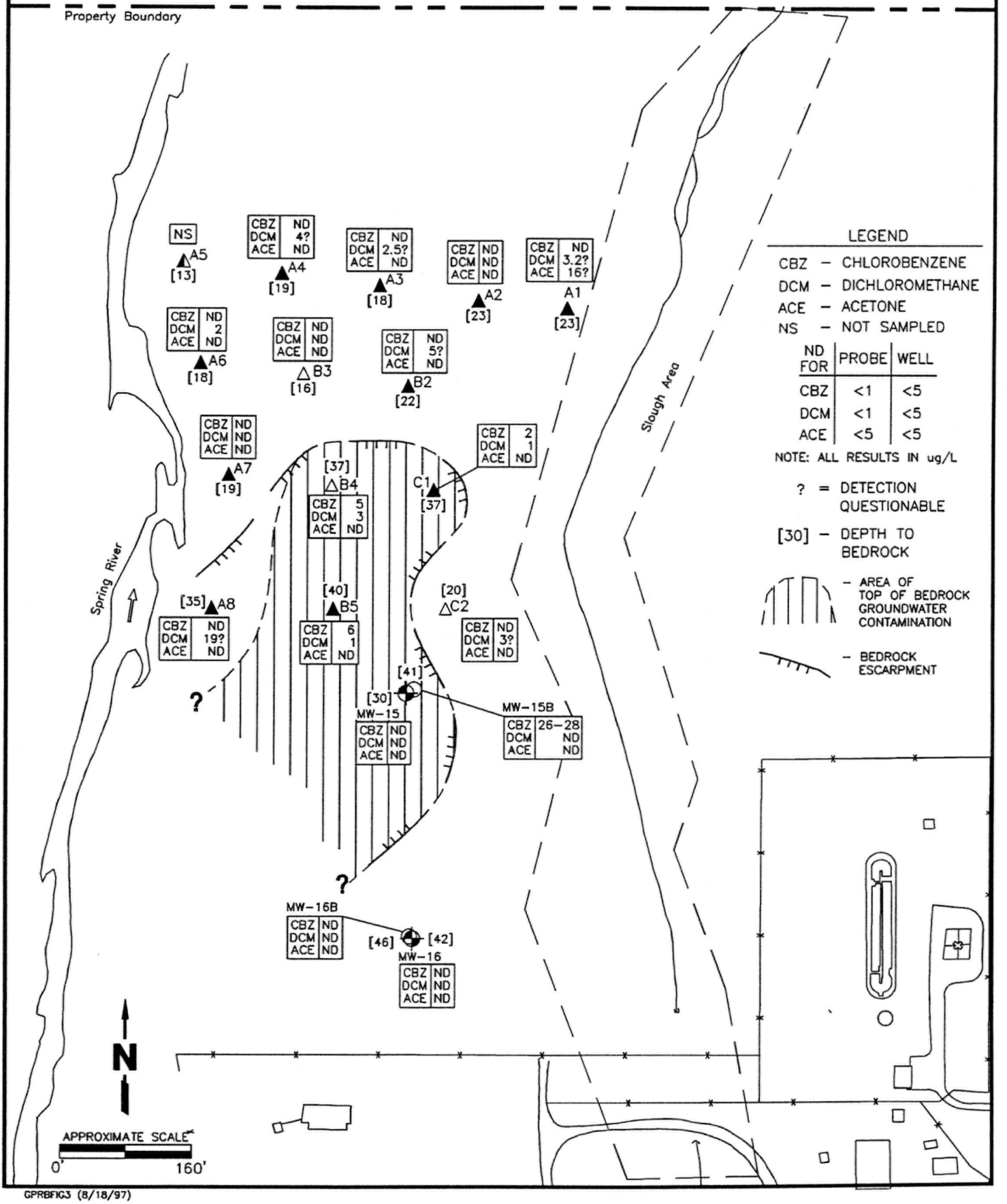
1. Summary of analyses is for volatile organic compounds (VOCs) with concentrations expressed in µg/L (ppb)
2. Top-of-Bedrock wells are in **Bold** font
3. ND = Not detected above laboratory reporting limit (5 to 10 ug/L)
4. CBZ = Chlorobenzene DCM = Dichloromethane
   XYL = Xylene TOL = Toluene
   EBZ = Ethylbenzene BNZ = Benzene
   CME = Chloromethane ACE = Acetone
   TCA = 1,1,1-trichloroethane CDS = Carbon disulfide
5. Shaded areas indicated not sampled - "ns" = not sampled

FIGURE 2
GEOPROBE & 1997 MONITORING WELL SAMPLING RESULTS
SHALLOW GROUNDWATER ZONE
REMEDIATION ACTIVITIES – SYNTEX AGRIBUSINESS, INC.
VERONA, MISSOURI



GPRBFIG2 (8/18/97)

FIGURE 3
GEOPROBE & 1997 MONITORING WELL SAMPLING RESULTS
TOP OF BEDROCK GROUNDWATER ZONE
REMEDIATION ACTIVITIES – SYNTEX AGRIBUSINESS, INC.
VERONA, MISSOURI



GPRBFIG3 (8/18/97)

Chlorobenzene has also been detected during sampling events over the past three years in both shallow wells (MW-5, 6, and 9) and top-of-bedrock wells (MW-15B) at the northern end of the current monitoring well network, with concentrations on the order of 50 to 150 µg/L, decreasing to 10 to 30 µg/L at the northernmost line of monitoring wells. The relatively low concentrations and varying detection events of CBZ in monitoring well sampling, and the very low concentration levels detected during the Geoprobe survey, suggest the groundwater contamination probably extends north of the northernmost line of monitoring wells, but that chemical concentration levels are greatly attenuated in this area. Approximate edges of the area of dissolved CBZ contamination are depicted on both Figure 2 and Figure 3.

Based on the depictions in Figures 2 and 3, it appears dissolved chlorobenzene extends farther north in the top-of-bedrock zone than in the shallower groundwater horizons. In fact, the outline of the deeper zone CBZ detections appears to follow the outline of the deeper bedrock area previously discussed. No shallow groundwater detections of CBZ were reported for any of the Geoprobe locations, and occurrences of CBZ in the shallow groundwater are primarily along the west side of the floodplain, based on monitoring well sampling results. Past hydrogeologic evaluations indicated all groundwater above bedrock may be considered a single hydrogeologic zone, with expected intermixing of shallow and deep groundwater. However, the presence of distinct layers of clay and gravel at varying stratigraphic levels likely results in localized impediments to groundwater flow, both vertically and horizontally, between and within shallow and deep groundwater zones. The apparent distributions of CBZ in differing stratigraphic and horizontal positions are likely due to varying groundwater flow patterns, the presence of confining layers of impermeable clay which locally isolate upper and lower groundwater horizons, and/or density differences between shallow and deep groundwater. Thus, while mixing of all alluvial groundwater from the surface to the top of bedrock can generally assume to occur, groundwater flow patterns are not simple, and dissolved chemical content is not homogeneous.

6.0 RECOMMENDATIONS REGARDING NEW DOWNGRADIENT WELLS

As explained in Section 5.0, the presence of chlorobenzene is used as the basis for determining the extent of groundwater contamination for OU2 purposes using the following reasoning:

1. Of the three analytes examined, CBZ is the only chemical which has historically been used in facility production operations;
2. CBZ is the only analyte which has been regularly detected in historical groundwater sampling in a defined pattern of occurrence;
3. While Geoprobe and groundwater sampling detections of DCM may be real, its presence is widespread, sporadic, and inconsistent, with no definable pattern of occurrence, and it occurs at generally at low concentrations;
4. The style and occurrence of DCM detections, if real, suggest one or more off-site sources not related to past or present facility operations, and therefore not applicable for OU2 determinations; and

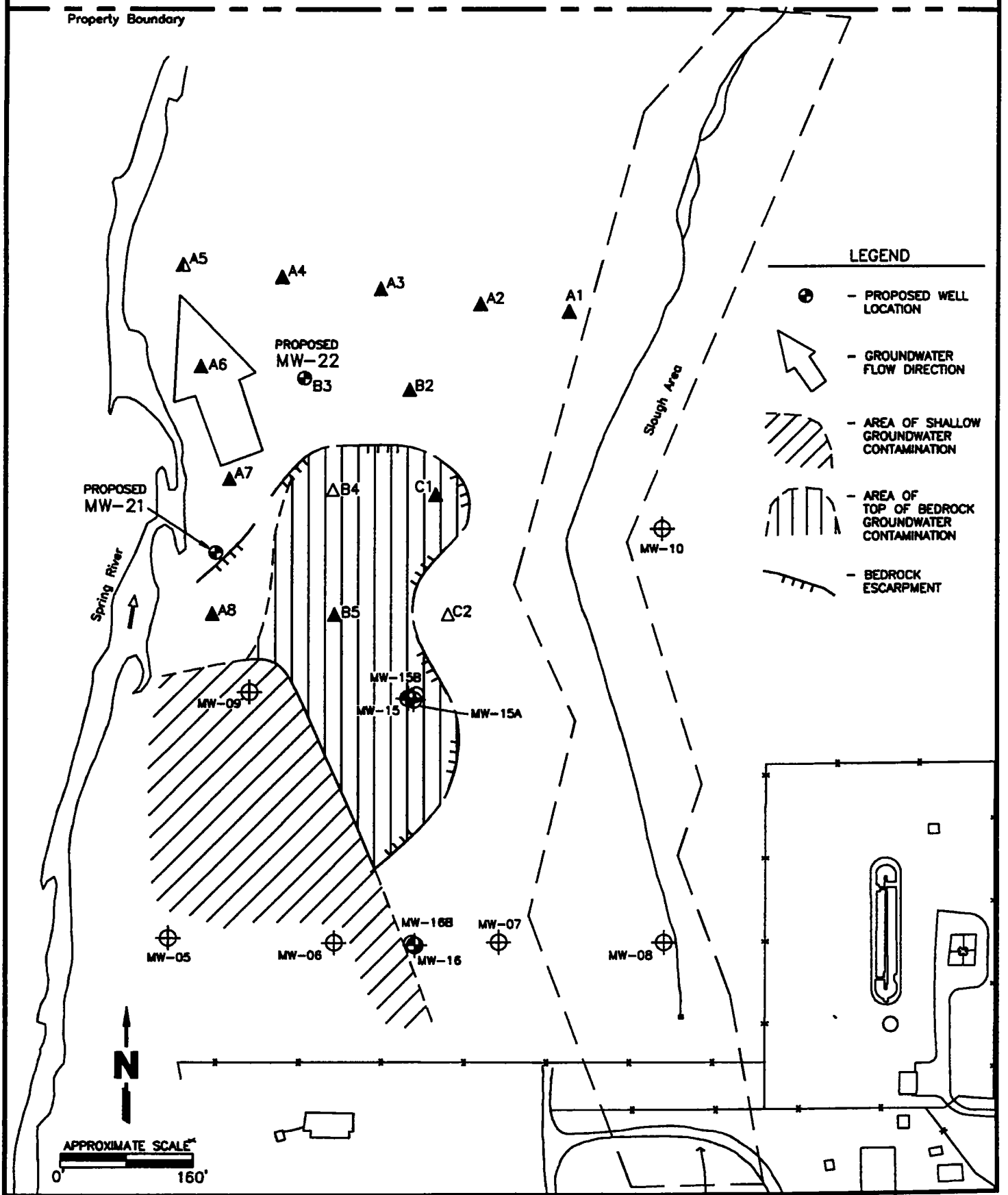
5. Acetone is not actually present in the groundwater, as supported by the absence of acetone detections in PES Geoprobe results and three years of normal groundwater sampling, a lack of on-site or known off-site source(s), the rapid natural attenuation of acetone in the environment, and the absence of acetone detections in normal groundwater sampling upgradient of the Geoprobe survey area.

Based on the interpreted extent and occurrence of groundwater contamination, combined with the overall, known groundwater flow direction of north-northwest, the installation of two new monitoring wells is recommended. Per OU2 goals, the locations are chosen to be outside and downgradient of groundwater contamination. Proposed locations of the new monitoring wells are depicted on Figure 4.

New well MW-21 is proposed between Geoprobe survey points A7 and A8, approximately in the area of the estimated bedrock "escarpment". This location is in a direct, hydraulically downgradient position relative to the estimated extent of the shallow groundwater contamination. The location is also hydraulically downgradient of the west side of the estimated top-of-bedrock groundwater contamination. The well should be installed to a depth of 20 feet, and should utilize a 10-foot screen. At this location, and with the suggested screen length, the well will be capable of monitoring groundwater from both the shallow and top-of-bedrock groundwater zones. Because of proximity to the Spring River, it can be expected that detections of monitored chemicals could vary from below detection limits to detectable; this is due to back-and-forth movement of the edge of the plume (particularly the deeper zone) resulting from seasonal and precipitation-induced variation in groundwater flow close to the Spring River.

New well MW-22 is proposed at Geoprobe location B3 for the purpose of monitoring any downgradient movement of the deeper, top-of-bedrock deep contamination defined by the presence of CBZ within the deep bedrock area. The selected location is directly downgradient of the portion of the top-of-bedrock groundwater contamination having the highest CBZ detections in the geoprobe survey. It is located in the area of shallow bedrock, and will detect any downgradient movement of CBZ outside the bedrock escarpment area. To maximize detection capability of the new well, it should be installed similar to well MW-15B. A 10-foot screen should be used and installed within a 3-foot bedrock socket.

FIGURE 4
PROPOSED LOCATIONS FOR DOWNGRADIENT MONITORING WELLS REMEDIATION ACTIVITIES – SYNTEX AGRIBUSINESS, INC. VERONA, MISSOURI



GPRSFIG4 (8/18/97)

Attachment A

GEOPROBE SURVEY REPORT - VERONA, MISSOURI FACILITY

ENVIRONMENTAL PROBING SERVICES (EPS)

July 14-15, 1997

ENVIRONMENTAL PROBING SERVICES
1227 N. COVINGTON, WICHITA, KANSAS 67212
TELEPHONE: (316) 721-3737 FAX: (316) 729-8463

ANALYSIS OF GROUNDWATER BY MODIFIED EPA METHODS 3810/8010
DUCOA / SYNTEX, VERONA, MISSOURI FACILITY, FOR LAYNE WESTERN INC.

JULY 14-15, 1997

ENVIRONMENTAL PROBING SERVICES
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ANALYSIS OF GROUNDWATER BY MODIFIED EPA METHODS 3810/8010 DUCOA / SYNTEX, VERONA, MISSOURI FACILITY, FOR LAYNE WESTERN INC.

JULY 14-15, 1997

J. Lynne Davison July 17, 1997
J. Lynne Davison Date
Project Manager/Senior Geologist

Bill R. Morris July 17, 1997
Bill R. Morris Date
Chemist

ENVIRONMENTAL PROBING SERVICES
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J. Lynne Davison July 17, 1997
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Project Manager/Senior Geologist

Bill R. Morris July 17, 1997
Bill R. Morris Date
Chemist

ENVIRONMENTAL PROBING SERVICES
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APPENDICES

ENVIRONMENTAL PROBING SERVICES
1227 N. COVINGTON, WICHITA, KANSAS 67212
TELEPHONE: (316) 721-3737 FAX: (316) 729-8463

1. INTRODUCTION

An environmental investigation consisting of analyses of groundwater samples by Modified EPA Methods 3810/8010 (Headspace/ Volatile Organics) was performed at Ducoa / Syntex, Verona, Missouri Facility ("the Site"). The environmental investigation was performed for Layne Western Inc., by Environmental Probing Services (EPS) on July 14-15, 1997.

The purpose of the environmental investigation was to collect groundwater samples and to perform on-site gas chromatography (GC) analysis of the samples. The project analytes were Dichloromethane (Methylene Chloride), Acetone, and Chlorobenzene.

EPS staff performing the environmental assessment consisted of J. Lynne Davison, Geologist/Project Manager for EPS and Bill R. Morris, Chemist for EPS.

2. METHODS OF INVESTIGATION

EPS used a 5400 Series Geoprobe® (Geoprobe) unit equipped with a gas chromatograph (GC) mobile lab for the investigation at the Site. Groundwater samples were obtained using the Geoprobe. All samples collected were field GC tested for Dichloromethane, Acetone, and Chlorobenzene.

2.1 SAMPLING LOCATIONS

Thirteen (13) probes were advanced at (10) locations at the Site. Map 1 and Map 2 (Appendix 1) depicts the locations at the site. The project sampling points are as follows:

Location	Sample Depth
UPG -1	36 ft BGL-Groundwater
UPG -2	28 ft BGL-Groundwater
UPG -3	26 ft BGL-Groundwater
A-1	12 ft BGL-Groundwater
A-1	19 ft BGL-Groundwater
A-2	12 ft BGL-Groundwater
A-2	19 ft BGL-Groundwater
A-3	13 ft BGL-Groundwater
A-4	12 ft BGL-Groundwater
A-4	18 ft BGL-Groundwater
A-5	12 ft BGL-Groundwater
A-6	10.5 ft BGL-Groundwater
A-7	12 ft BGL-Groundwater

2.2 CALIBRATION

Prior to field GC testing the groundwater samples several quality assurance and quality control (QA/QC) samples are prepared and analyzed to assure that the system and method of testing were within acceptable parameters.

A system blank was the first sample analyzed. The system blank demonstrated that the GC system was free from contamination.

The next sample was the reagent blank. The reagent blank demonstrates the purity of the reagent that was used in sample preparation.

The subsequent sample was the calibration check standard. The calibration check standard confirms either the continued linearity of the calibration curve or the need to develop a new calibration curve. The correlation coefficient for each analyte was greater than 0.9000.

The QA/QC chromatograms and calibration curves can be found in Appendix 5 (System Calibration Data).

2.3 SAMPLING METHOD

Groundwater sampling was performed at the Site by advancing (hydraulic pressure and static weight) a steel probe equipped with a expendable tip sampler to the sampling depth. Polyethylene tubing was lowered into the probe rods to the sampling depth. A groundwater sample was removed via a vacuum-volume pump from the interval to be tested. If there were two intervals to be tested at the same probe location, the deep interval was sampled first. The probe rods were then raised to the second interval and four (4) liters of groundwater was removed from the sampling system before the sample was collected. A 20 ml groundwater sample was collected at the desired intervals in each test hole by the Chemist for on-site analyses by modified EPA method 3810/8010.

Geoprobe equipment decontamination was accomplished by washing rods and samplers with Alconox water and rinsing with deionized water. All probing and sampling equipment was decontaminated prior to use at the site. After sampling, all probe holes were sealed bottom to top with Na-bentonite and hydrated.

2.5 MODIFIED EPA METHODS 3810/8010

The Modified EPA Method 3810/8010 of groundwater analysis was employed for this project. The 3810/8010 Method consists of placing 20 ml of groundwater in a 40 ml glass vial equipped with a Teflon lid liner. The cap was tightly secured and the vial was placed in a 90° C heating block for a minimum of 15 minutes. After warming, a 500 ul

vapor sample was withdrawn from the 40 ml vial using a 1000 ul syringe. The vapor sample was injected into the 5890 Hewlett-Packard gas chromotograph (GC) for analysis.

For this project the photoionization detector (PID) and electron capture detector (ECD) were run in series.

3. FINDINGS AND CONCLUSIONS

See Appendix 2-Field Log and Analytical Results

4. LIMITATIONS

The Modified EPA Method 3810/8010 is a proven method for the field screening of volatile organic compounds (VOCs) although at times, the results may prove similar to other laboratory methods, they may also prove to differ. The method provides a rapid screening for the target compounds with reproducible results. Any other conclusions drawn from this investigation must allow for the limitations of the methods employed. This report has been prepared for the exclusive use of Layne Western Inc. for specific application to the project, no other warranty is expressed or implied.

APPENDIX 1

MAPS 1 AND 2
LOCATION OF PROBE HOLES
DUCOA / SYNTEX, VERONA, MISSOURI FACILITY

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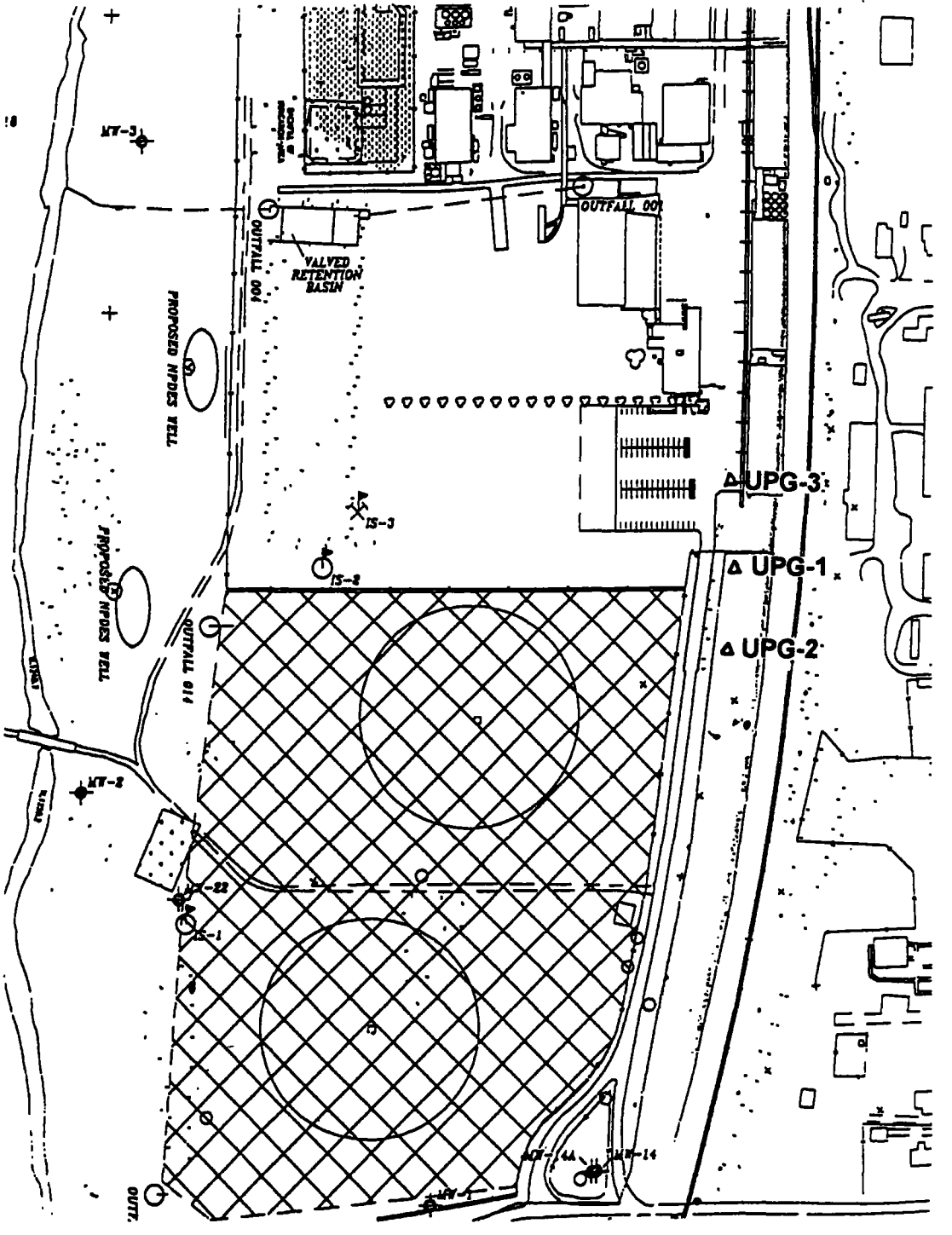

Map 1 - Geoprobe sample locations UPG-1, UPG-2, and UPG-3 at Ducoa / Syntex Verona, Missouri Facility

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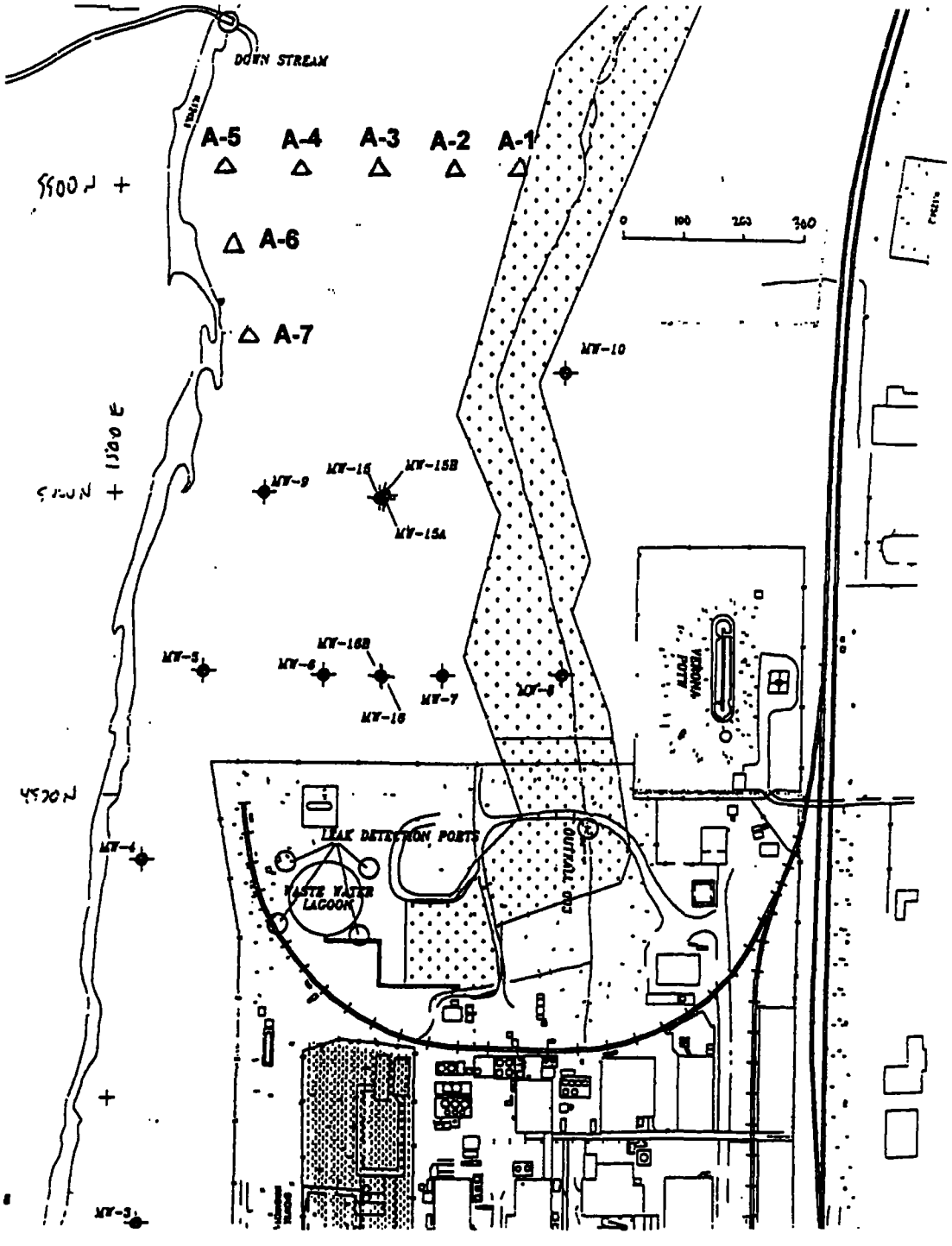

Map 2 - Geoprobe sample locations A-1, A-2, A-3, A-4, A-5, A-6, and A-7 at Ducoa / Syntex, Verona, Missouri Facility

APPENDIX 2

FIELD LOG AND ANALYTICAL RESULTS

ENVIRONMENTAL PROBING SERVICES
1227 N. COVINGTON, WICHITA, KANSAS 67212
TELEPHONE: (316) 721-3737 FAX: (316) 729-8463

Test Point # : **UPG -1**		***Sample Depth:*** **36' BGL**	***Matrix:*** **Groundwater**
Analyte:	***Method Detection Limit***	***Concentration***	***Units***
Dichloromethane	1	ND	ug/L
Acetone	1	19.4	ug/L
Chlorobenzene	1	1.0	ug/L

Test Point # : **UPG-2**		***Sample Depth:*** **28' BGL**	***Matrix:*** **Groundwater**
Analyte:	***Method Detection Limit***	***Concentration***	***Units***
Dichloromethane	1	3.3	ug/L
Acetone	1	24.2	ug/L
Chlorobenzene	1	<1	ug/L

Test Point # : **UPG-3**		***Sample Depth:*** **26' BGL**	***Matrix:*** **Groundwater**
Analyte:	***Method Detection Limit***	***Concentration***	***Units***
Dichloromethane	1	8.2	ug/L
Acetone	1	79.2	ug/L
Chlorobenzene	1	ND	ug/L

Test Point # : **A-1**		***Sample Depth:*** **12' BGL**	***Matrix:*** **Groundwater**
Analyte:	***Method Detection Limit***	***Concentration***	***Units***
Dichloromethane	1	6.4	ug/L
Acetone	1	5.7	ug/L
Chlorobenzene	1	ND	ug/L

Test Point # : **A-1**		***Sample Depth:*** **19' BGL**	***Matrix:*** **Groundwater**
Analyte:	***Method Detection Limit***	***Concentration***	***Units***
Dichloromethane	1	3.2	ug/L
Acetone	1	16.0	ug/L
Chlorobenzene	1	ND	ug/L

Test Point # : **A-2**		***Sample Depth:*** **12' BGL**	***Matrix:*** **Groundwater**
Analyte:	***Method Detection Limit***	***Concentration***	***Units***
Dichloromethane	1	5.1	ug/L
Acetone	1	5.7	ug/L
Chlorobenzene	1	ND	ug/L

Conversion: 1 ug/Kg = 1 ppb
1 ug/L = 1 ppb
ND = No Detection

Project: **DUCOA / SYNTEX**
Date: **July 14-15, 1997**
Location: **Verona, Missouri**
Method: **Mod. EPA 3810 / 8010**

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Test Point # : **A-2** ***Sample Depth:*** **19' BGL** ***Matrix:*** **Groundwater**

Analyte:	*Method Detection Limit*	*Concentration*	*Units*
Dichloromethane	1	10.4	ug/L
Acetone	1	23.4	ug/L
Chlorobenzene	1	ND	ug/L

Test Point # : **A-3** ***Sample Depth:*** **13' BGL** ***Matrix:*** **Groundwater**

Analyte:	*Method Detection Limit*	*Concentration*	*Units*
Dichloromethane	1	1.5	ug/L
Acetone	1	8.1	ug/L
Chlorobenzene	1	ND	ug/L

Test Point # : **A-4** ***Sample Depth:*** **12' BGL** ***Matrix:*** **Groundwater**

Analyte:	*Method Detection Limit*	*Concentration*	*Units*
Dichloromethane	1	2.3	ug/L
Acetone	1	9.9	ug/L
Chlorobenzene	1	ND	ug/L

Test Point # : **A-4** ***Sample Depth:*** **18' BGL** ***Matrix:*** **Groundwater**

Analyte:	*Method Detection Limit*	*Concentration*	*Units*
Dichloromethane	1	2.1	ug/L
Acetone	1	14.8	ug/L
Chlorobenzene	1	ND	ug/L

Test Point # : **A-5** ***Sample Depth:*** **12' BGL** ***Matrix:*** **Groundwater**

Analyte:	*Method Detection Limit*	*Concentration*	*Units*
Dichloromethane	1	2.0	ug/L
Acetone	1	3.5	ug/L
Chlorobenzene	1	ND	ug/L

Test Point # : **A-6** ***Sample Depth:*** **10.5' BGL** ***Matrix:*** **Groundwater**

Analyte:	*Method Detection Limit*	*Concentration*	*Units*
Dichloromethane	1	<1	ug/L
Acetone	1	20.4	ug/L
Chlorobenzene	1	ND	ug/L

Conversion: 1 ug/Kg = 1 ppb
1 ug/L = 1 ppb
ND = No Detection

Project: **DUCOA / SYNTEX**
Date: **July 14-15, 1997**
Location: **Verona, Missouri**
Method: **Mod. EPA 3810/8010**

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Test Point # : **A-7** ***Sample Depth:*** **12' BGL** ***Matrix:*** **Groundwater**

Analyte:	***Method Detection Limit***	***Concentration***	***Units***
Dichloromethane	1	17.4	ug/L
Acetone	1	45.3	ug/L
Chlorobenzene	1	ND	ug/L

Conversion: 1 ug/Kg = 1 ppb
1 ug/L = 1 ppb
ND = No Detection

Project: **DUCOA / SYNTEX**
Date: **July 14-15, 1997**
Location: **Verona, Missouri**
Method: **Mod. EPA 3810 / 8010**

Note: The GC analytical method that was followed for the project is a modification of an EPA recognized method for sample extraction and analysis. Analytes occur as "peaks" with height and width on the chromatogram.

Quantitative determination of the analytes is achieved through integration of peak area or measurement of peak height relative to the area and peak height of standards prepared for this project. The standards for this project were various concentrations of Methylene Chloride, Chlorobenzene and Acetone.

Identification of analytes is determined by the time (x-axis of the chromatogram) at which the "unknown analyte" found in the groundwater sample occurs on the chromatogram. If the "unknown " peak occurs in very close proximity to the peak of the standard peaks, the unknown is determined to be the standard compound. This "positive" identification is not 100% accurate as some compounds co-elute during GC analysis and an absolute identification must be made by GC/MS analysis.

APPENDIX 3

LABORATORY SAMPLE LOG

LABORATORY SAMPLE LOG-IN

LABORATORY NUMBER	DATE RECD	FILE NUMBER	RECD BY	CLIENT	DESCRIPTION	PRIORITY NUMBER	CONTAINER	SAMPLE STORAGE LOCATION	ORDER NUMBER	LABELING REVIEWED BY	DATE REPORTED
UPG-1	7/14		BM	Layne Western	H_2O		(1) 40mL VOA	N/A		BM	7/14/97
UPG-2	7/14		BM	Layne Western	H_2O		(1) 40mL VOA	N/A		BM	7/14/97
UPG-3	7/14		BM	Layne Western	H_2O		(1) 40mL VOA	N/A		BM	7/14/97
A-2 19' H_2O	7/14		BM	Layne Western	H_2O		(1) 40mL VOA	N/A		BM	7/14/97
A-2 12' H_2O	7/14		BM	Layne Western	H_2O		(1) 40mL VOA	N/A		BM	7/14/97
A-1 19' H_2O	7/14		BM	Layne Western	H_2O		(1) 40mL VOA	N/A		BM	7/14/97
A-1 12' H_2O	7/14		BM	Layne Western	H_2O		(1) 40mL VOA	N/A		BM	7/14/97
A-3 13' H_2O	7/15		BM	Layne Western	H_2O		(1) 40mL VOA	N/A		BM	7/15/97
A-4 18' H_2O	7/15		BM	Layne Western	H_2O		(1) 40mL VOA	N/A		BM	7/15/97
A-4 12' H_2O	7/15		BM	Layne Western	H_2O		(1) 40mL VOA	N/A		BM	7/15/97
A-5 12' H_2O	7/15		BM	Layne Western	H_2O		(1) 40mL VOA	N/A		BM	7/15/97
A-6 10.5' H_2O	7/15		BM	Layne Western	H_2O		(1) 40mL VOA	N/A		BM	7/15/97
A-7 12' H_2O	7/15		BM	Layne Western	H_2O		(1) 40mL VOA	N/A		BM	7/15/97

ENVIRONMENTAL PROBING SERVICES

A DIVISION OF ECC, INC.

APPENDIX 4

CHROMATOGRAMS AND STATISTICS

*** Concentration Report for << 7-14015A >>, Printed: 07/14/97 2:25:51p ***

Raw data file created: 07/14/97 2:18:51p Injected: 07/14/97 2:13:44p
Detection results file created: 07/14/97 2:24:32p
Final results file created: 07/14/97 2:25:46p

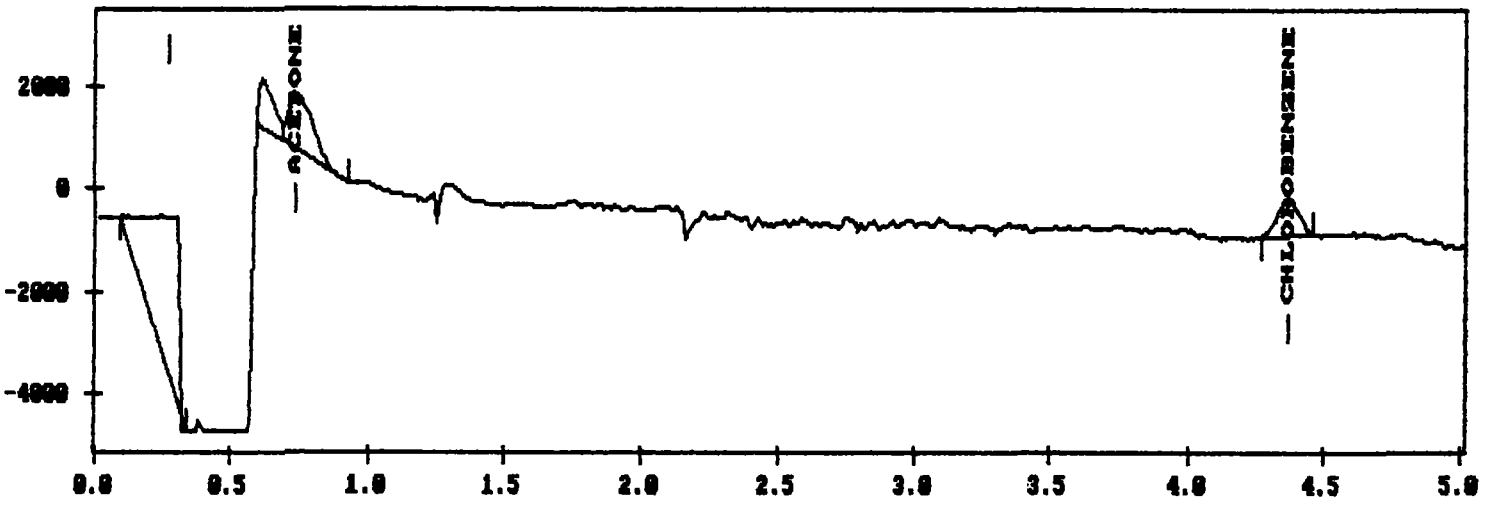
Name: DETECTION BY PID
ment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : UPG-1 36' H20
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/14/97 10:59:37a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.732	ACETONE	19.489250	6087.01123	1088.70654
4.368	CHLOROBENZENE	1.029552	3800.66430	699.428589

*** Concentration Report for << 7-14016A >>, Printed: 07/14/97 2:23:57p ***

Raw data file created: 07/14/97 2:18:51p Injected: 02/05/206 10:28:16p
Detection results file created: 07/14/97 2:23:16p
Final results file created: 07/14/97 2:23:18p

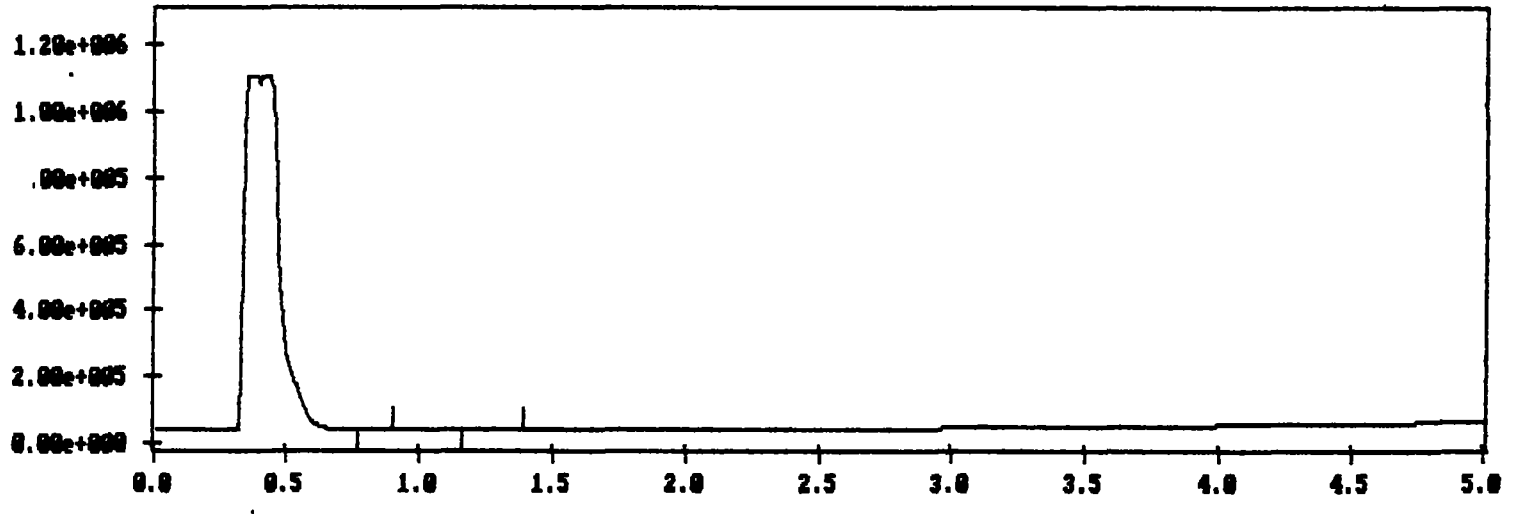
Name: DETECTION BY ECD
ment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : UPG-1 36' H20
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
NF	METHYLENE CL	Not Found	Not Found	Not Found

*** Concentration Report for << 7-14017A >>, Printed: 07/14/97 3:53:58p ***

Raw data file created: 07/14/97 3:45:02p Injected: 07/14/97 3:39:56p
Detection results file created: 07/14/97 3:48:18p
Final results file created: 07/14/97 3:53:49p

Name: DETECTION BY PID
ment: ACETONE AND CHLOROBENZENE

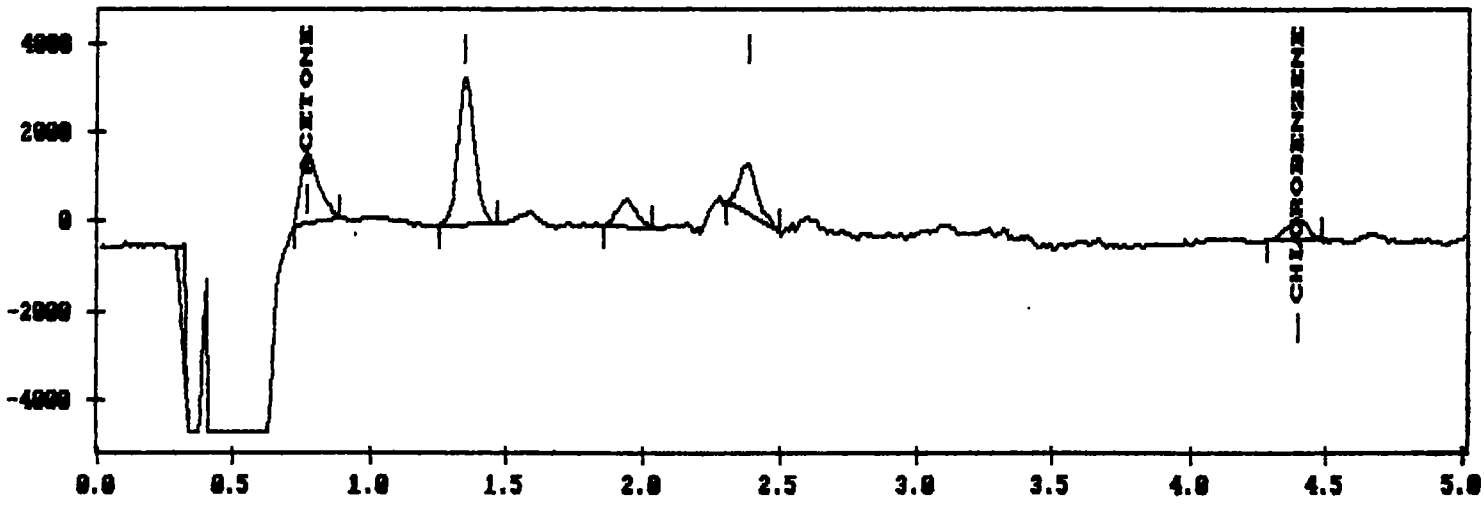
Acquisition method: LAYN-SOL

Sample information modified: 07/14/97 3:53:46p

	Current Sample Information	Original Sample Information
Sample name	: UPG-2 28' H20	UPG-1 36' H20
Vial ID	:	
Injection volume	: 1.000000	1.000000
IS amount (Sample)	: 0.000000	0.000000
Sample amount	: 1.000000	1.000000
Dilution factor	: 1.000000	1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/14/97 10:59:37a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.772	ACETONE	24.236923	7569.83593	1556.94116

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
4.390	CHLOROBENZENE	0.731496	2700.37060	477.954895

*** Concentration Report for << 7-14018A >>, Printed: 07/16/97 10:31:16p ***

Raw data file created: 07/14/97 3:45:02p Injected: 02/05/206 10:28:16p
etection results file created: 07/14/97 3:45:26p
Final results file created: 07/16/97 10:31:09p

Name: DETECTION BY ECD
omment: METHYLENE CHLORIDE (DICHLOROMETHANE)

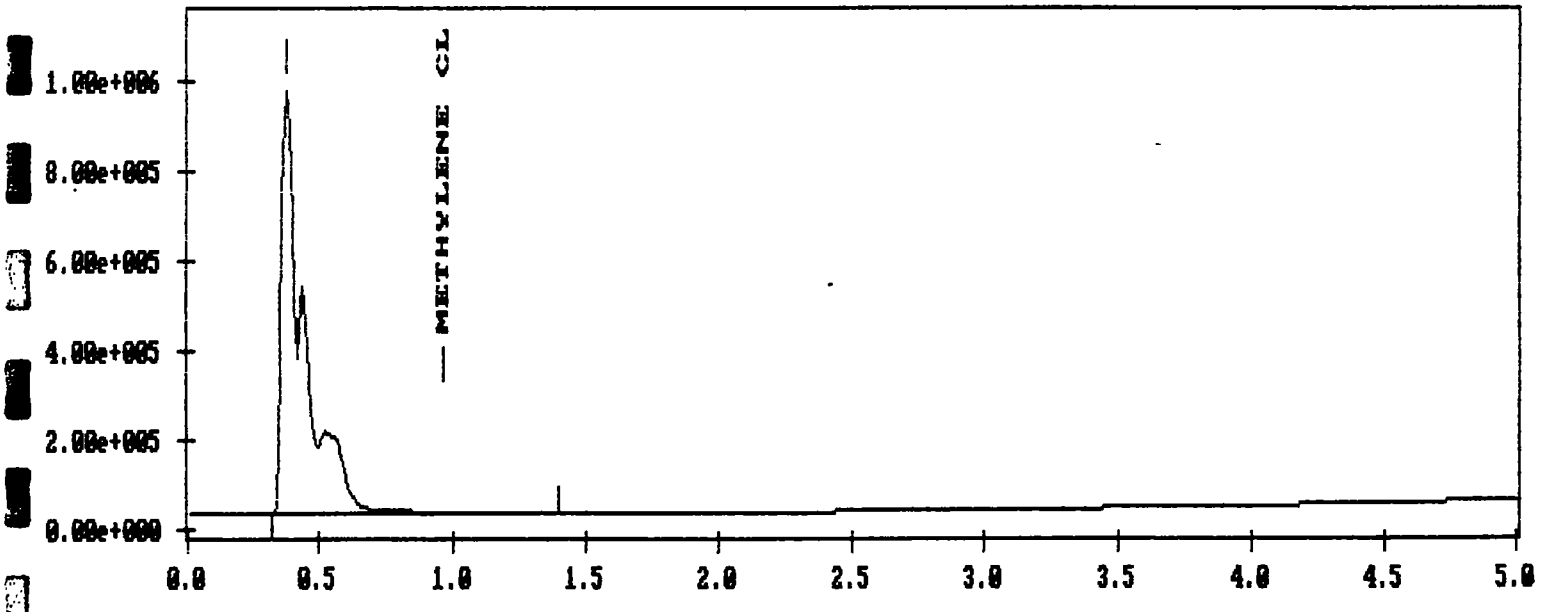
Acquisition method: LAYN-SOL

Sample information modified: 07/14/97 3:59:41p

	Current Sample Information	Original Sample Information
Sample name	: UPG-2 28' H20	UPG-1 36' H20
Vial ID	:	
njection volume	: 1.000000	1.000000
IS amount (Sample)	: 0.000000	0.000000
Sample amount	: 1.000000	1.000000
ilution factor	: 1.000000	1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
alibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.960	METHYLENE CL	3.253351	21024.0371	3692.41528

*** Concentration Report for << 7-14019A >>, Printed: 07/14/97 5:20:11p ***

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Detection results file created: 07/14/97 5:19:31p
Final results file created: 07/14/97 5:19:59p

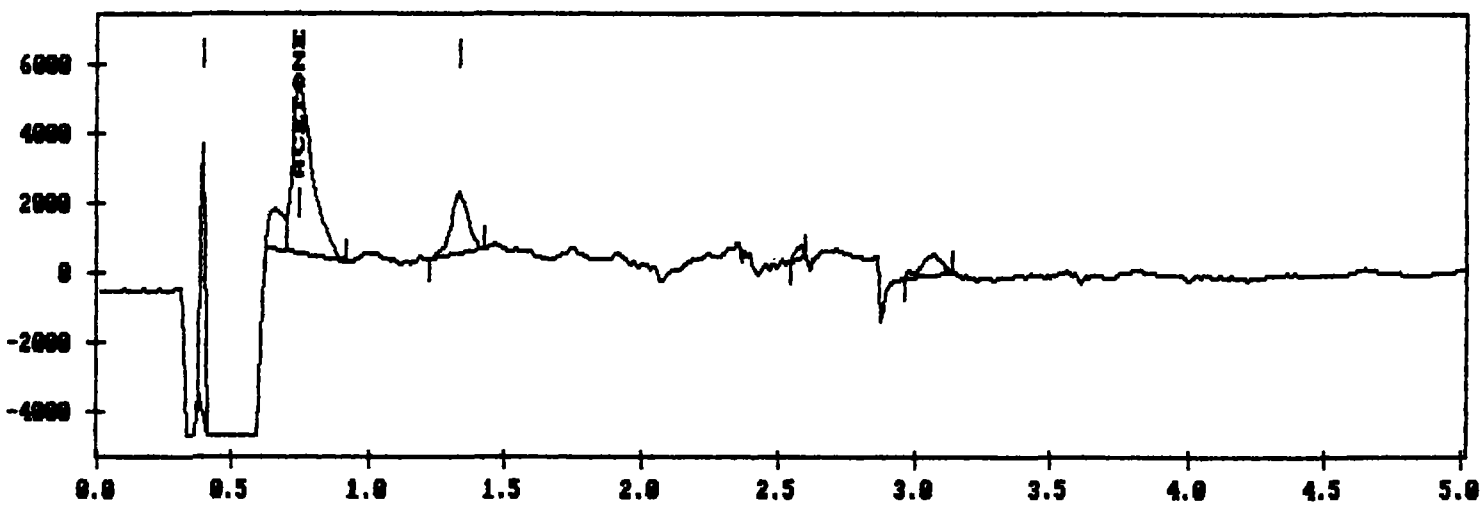
Name: DETECTION BY PID
mment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : UPG-3 26' H20
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/14/97 10:59:37a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.744	ACETONE	79.228783	24745.2558	4893.13525
NF	CHLOROBENZENE	Not Found	Not Found	Not Found

*** Concentration Report for << 7-14020A >>, Printed: 07/16/97 10:44:19p ***

Raw data file created: 07/14/97 4:45:15p Injected: 02/05/206 10:28:16p
Detection results file created: 07/14/97 5:21:04p
Final results file created: 07/16/97 10:44:01p

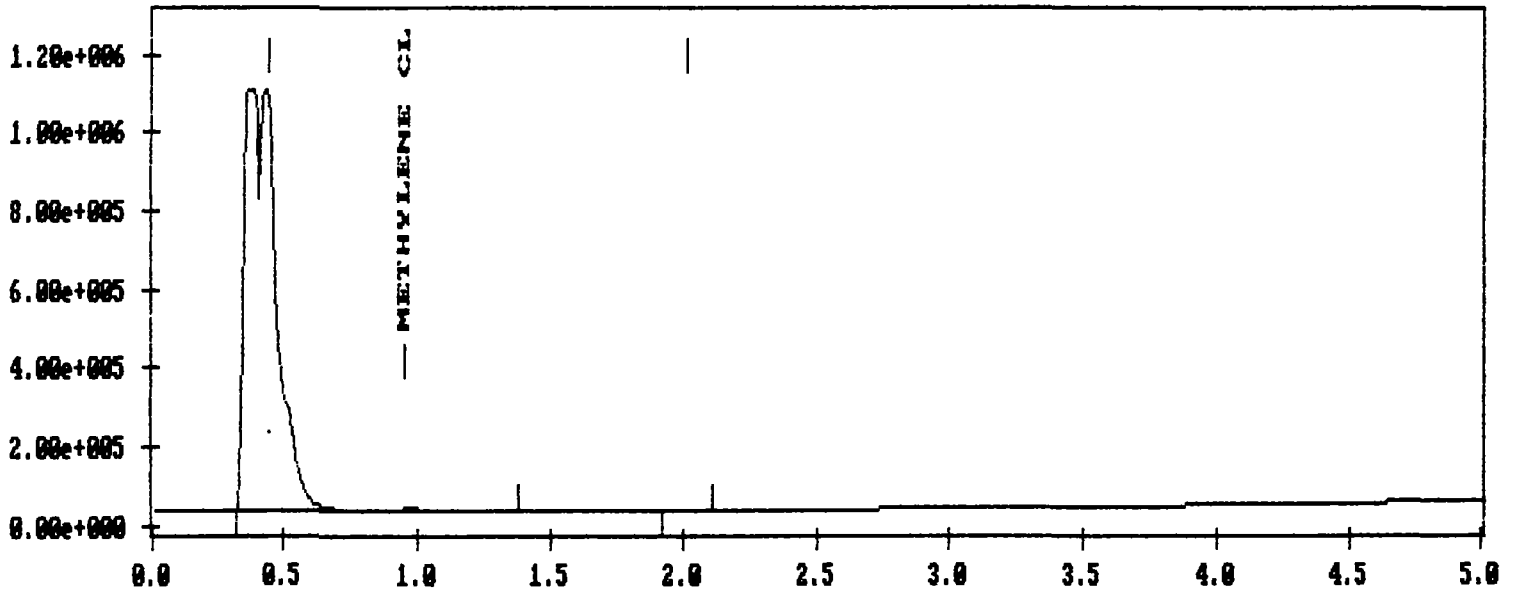
Name: DETECTION BY ECD
Comment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : UPG-3 26' H20
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.950	METHYLENE CL	8.243356	53270.8046	6252.09960

*** Concentration Report for << 7-14027A >>, Printed: 07/14/97 7:28:29p ***

Raw data file created: 07/14/97 7:26:56p Injected: 07/14/97 7:20:55p
Detection results file created: 07/14/97 7:27:48p
Final results file created: 07/14/97 7:28:19p

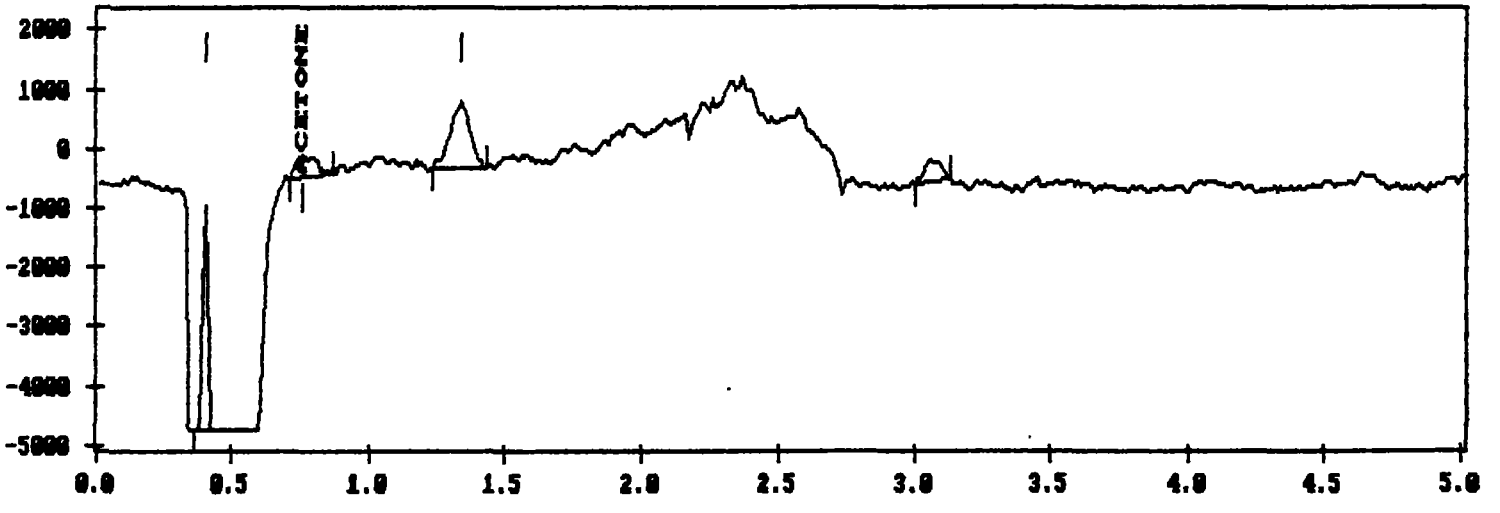
Name: DETECTION BY PID
ment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : A-1-12' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/14/97 10:59:37a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.760	ACETONE	5.709584	1783.25488	389.756256
NF	CHLOROBENZENE	Not Found	Not Found	Not Found

*** Concentration Report for << 7-14028A >>, Printed: 07/14/97 7:29:54p ***

Raw data file created: 07/14/97 7:26:56p Injected: 07/14/97 7:20:55p
Detection results file created: 07/14/97 7:29:14p
Final results file created: 07/14/97 7:29:47p

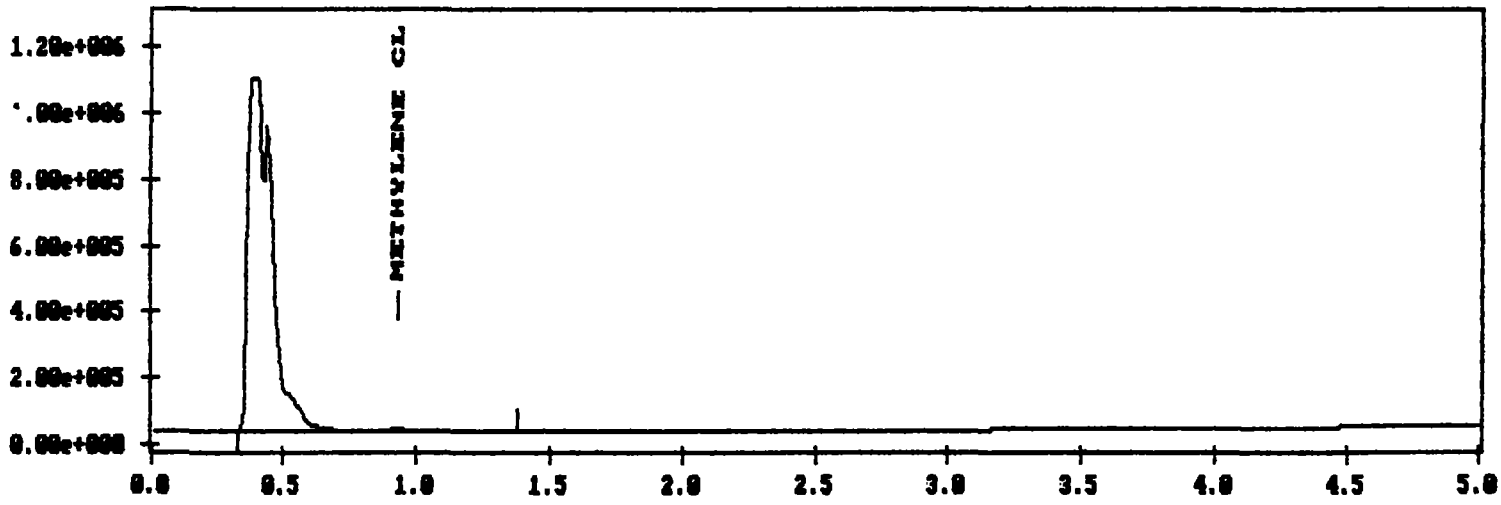
Name: DETECTION BY ECD
ament: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : A-1-12' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.928	METHYLENE CL	6.465172	41779.6992	7897.98974

*** Concentration Report for << 7-14025A >>, Printed: 07/14/97 7:24:39p ***

Raw data file created: 07/14/97 7:14:27p Injected: 07/14/97 7:09:20p
Detection results file created: 07/14/97 7:23:11p
Final results file created: 07/14/97 7:23:57p

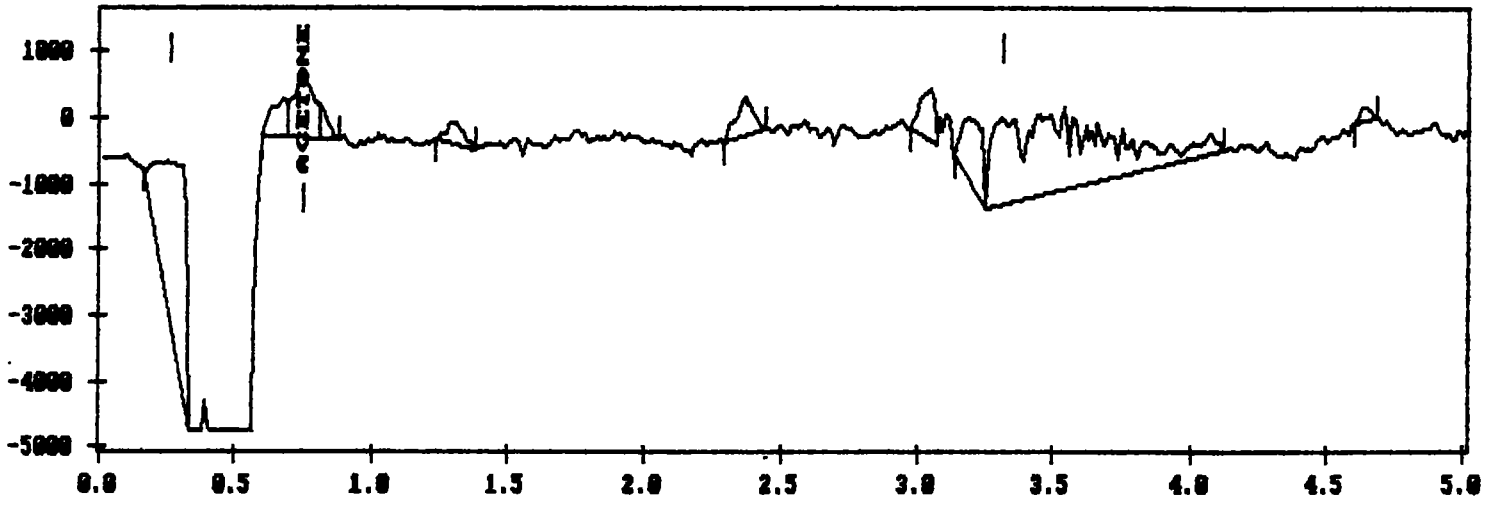
Name: DETECTION BY PID
ment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : A-1-19' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/14/97 10:59:37a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.750	ACETONE	16.039461	5009.55029	897.225037
NF	CHLOROBENZENE	Not Found	Not Found	Not Found

*** Concentration Report for << 7-14026A >>, Printed: 07/14/97 7:26:27p ***

Raw data file created: 07/14/97 7:14:27p Injected: 02/05/206 10:28:16p
Detection results file created: 07/14/97 7:25:46p
Final results file created: 07/14/97 7:26:21p

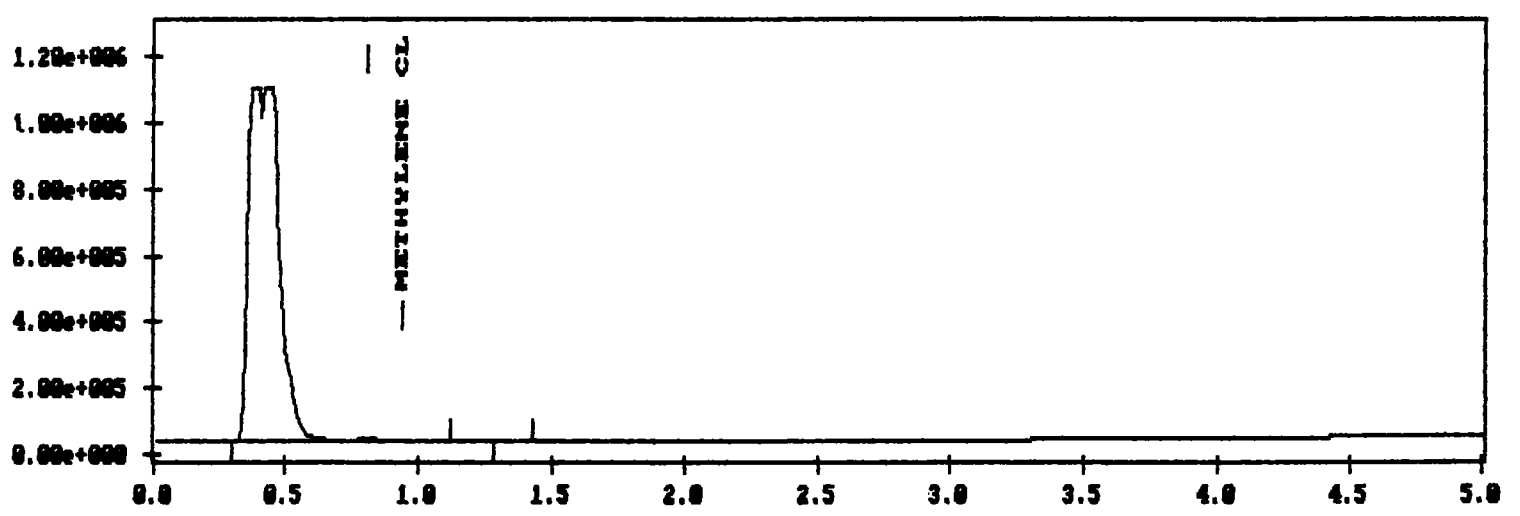
Name: DETECTION BY ECD
ment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : A-1-19' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.934	METHYLENE CL	3.182169	20564.0449	2956.52807

*** Concentration Report for << 7-14023A >>, Printed: 07/14/97 7:05:30p ***

Raw data file created: 07/14/97 6:59:35p Injected: 07/14/97 6:54:28p
Detection results file created: 07/14/97 7:04:44p
Final results file created: 07/14/97 7:05:18p

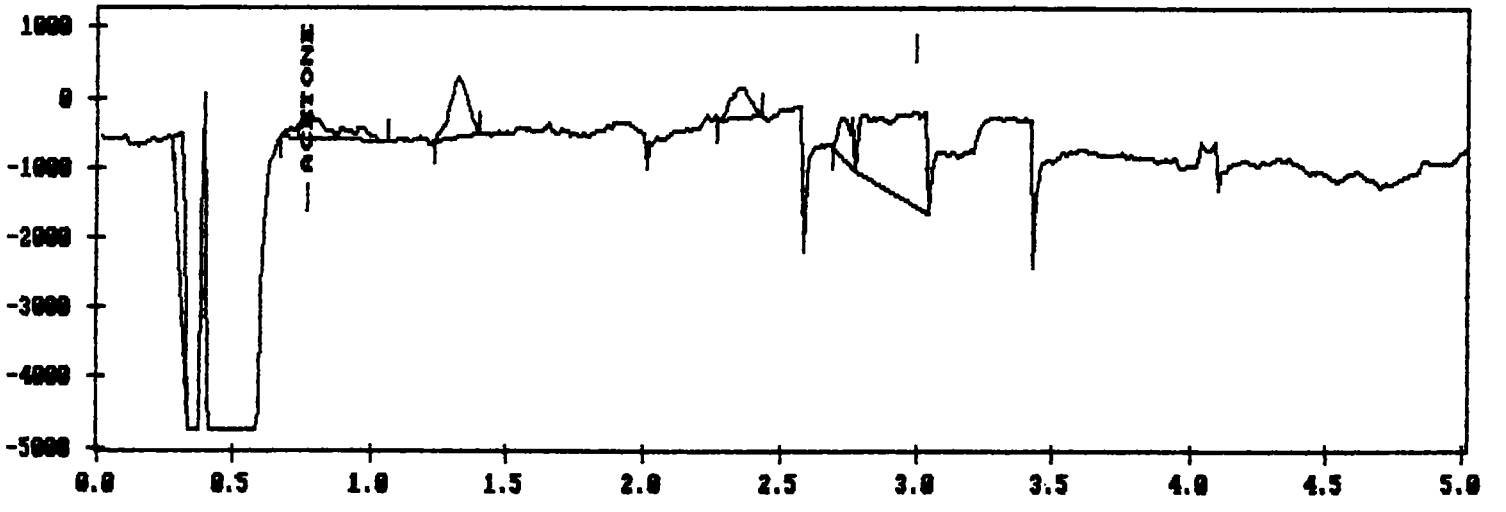
Name: DETECTION BY PID
ıment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : A-2-12' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/14/97 10:59:37a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.770	ACETONE	5.737665	1792.02551	339.317963
NF	CHLOROBENZENE	Not Found	Not Found	Not Found

*** Concentration Report for << 7-14024A >>, Printed: 07/14/97 7:07:08p ***

Raw data file created: 07/14/97 6:59:36p Injected: 02/05/206 10:28:16p
Detection results file created: 07/14/97 7:05:55p
Final results file created: 07/14/97 7:07:00p

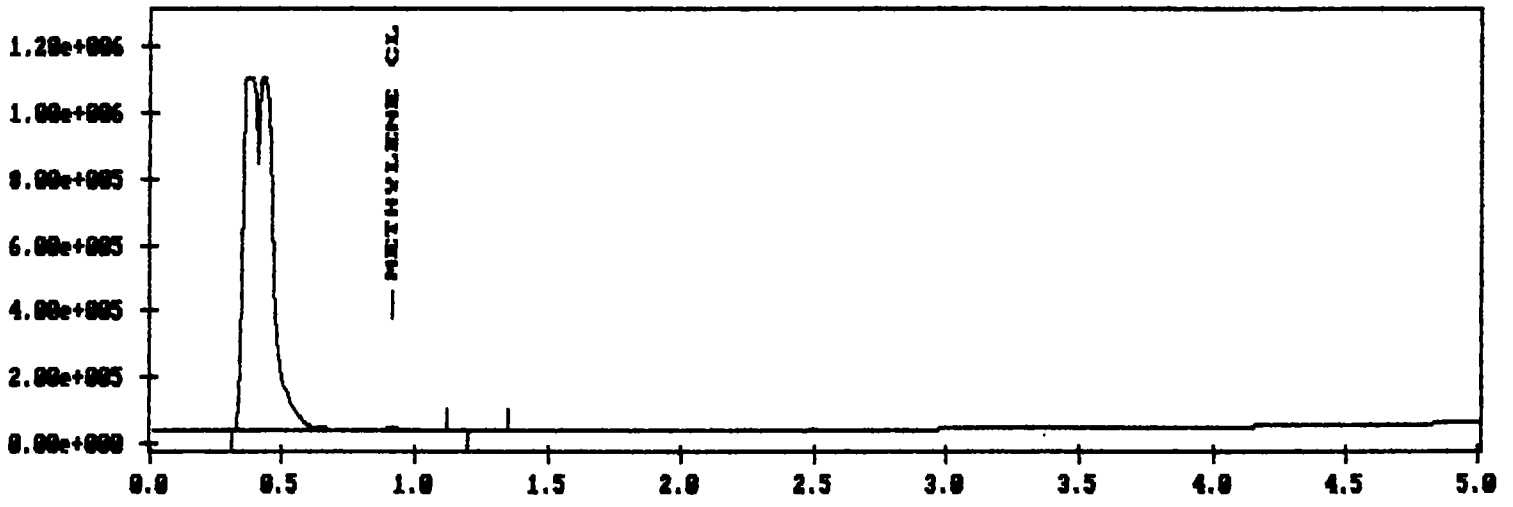
Name: DETECTION BY ECD
ment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : A-2-12' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.914	METHYLENE CL	5.140281	33217.8945	6667.11865

*** Concentration Report for << 7-14021A >>, Printed: 07/14/97 6:50:59p ***

Raw data file created: 07/14/97 6:48:36p Injected: 07/14/97 6:43:30p
Detection results file created: 07/14/97 6:50:14p
Final results file created: 07/14/97 6:50:50p

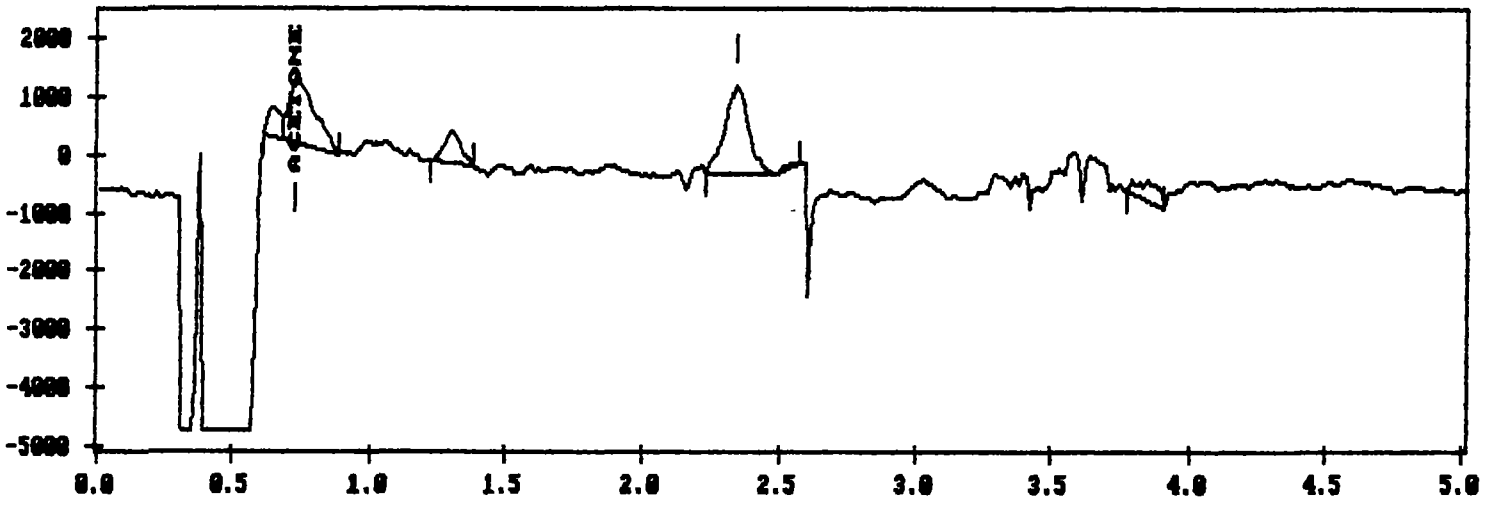
Name: DETECTION BY PID
Comment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : A-2-19' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/14/97 10:59:37a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.730	ACETONE	23.469381	7330.11181	1098.00000
NF	CHLOROBENZENE	Not Found	Not Found	Not Found

*** Concentration Report for << 7-14022A >>, Printed: 07/14/97 6:51:56p ***

Raw data file created: 07/14/97 6:48:37p Injected: 02/05/206 10:28:16p
Detection results file created: 07/14/97 6:51:48p
Final results file created: 07/14/97 6:51:50p

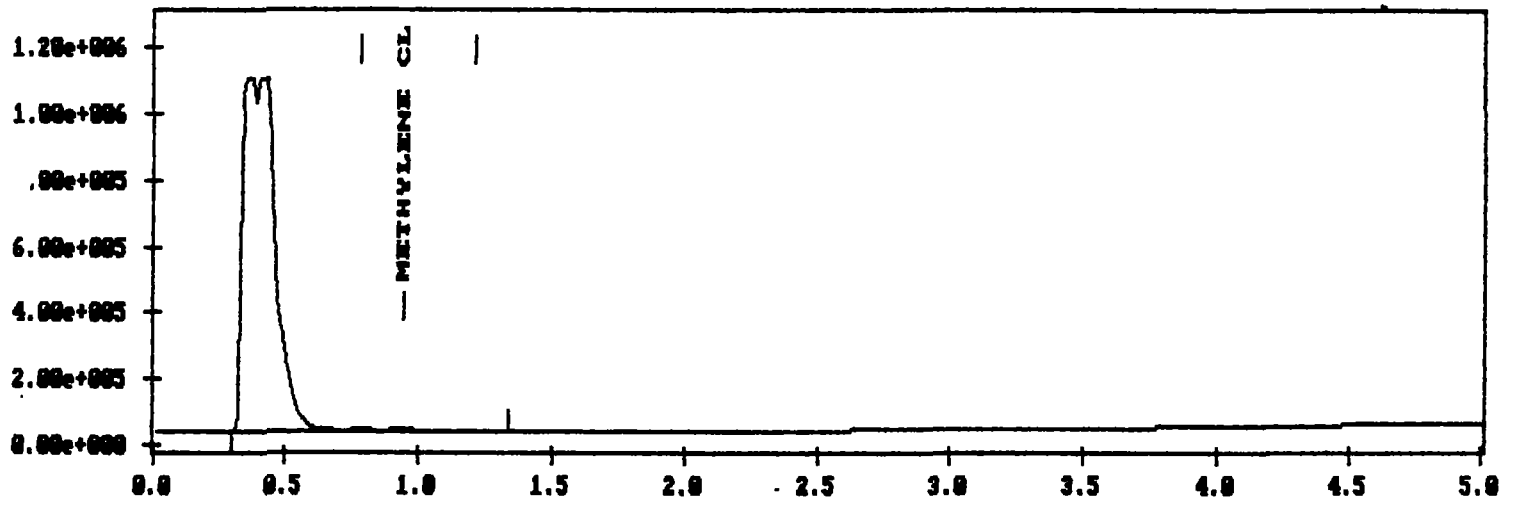
Name: DETECTION BY ECD
Comment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : A-2-19' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.941	METHYLENE CL	10.413781	67296.6875	7686.96337

*** Concentration Report for << 7-15005A >>, Printed: 07/15/97 8:57:27a ***

Raw data file created: 07/15/97 8:53:26a Injected: 07/15/97 8:48:18a
Detection results file created: 07/15/97 8:56:36a
Final results file created: 07/15/97 8:57:20a

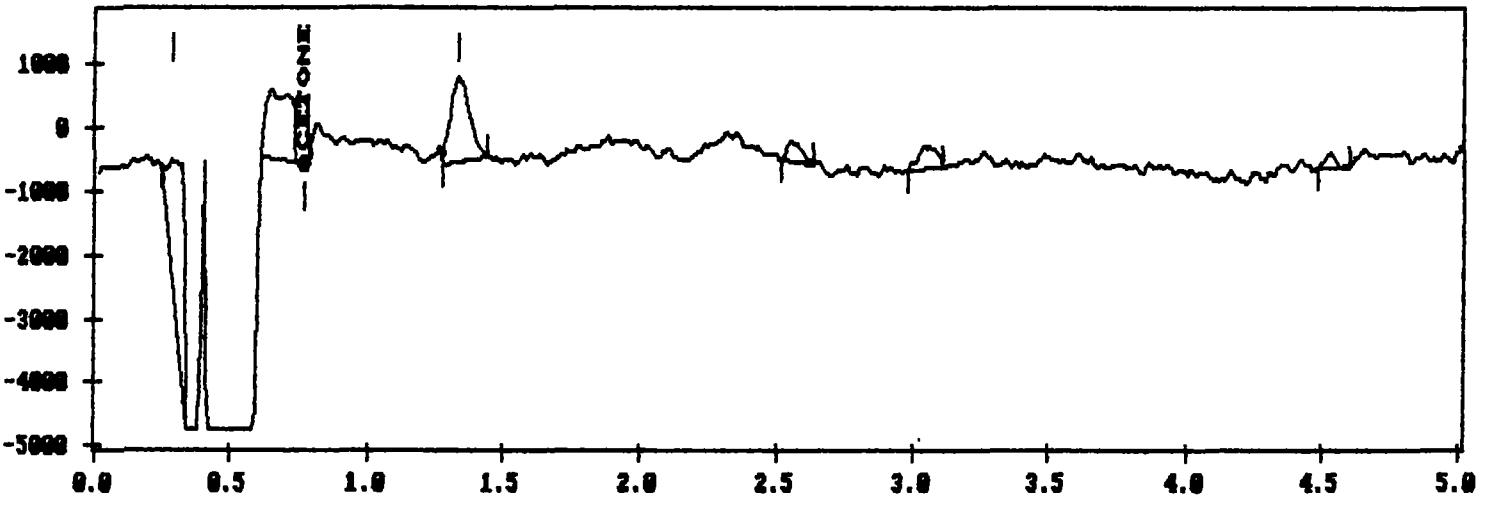
Name: DETECTION BY PID
mment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : A-3-13' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/15/97 8:34:39a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.770	ACETONE	8.130136	2676.37304	976.942688
NF	CHLOROBENZENE	Not Found	Not Found	Not Found

*** Concentration Report for << 7-15006A >>, Printed: 07/15/97 8:58:47a ***

Raw data file created: 07/15/97 8:53:26a Injected: 02/05/206 10:28:16p
Detection results file created: 07/15/97 8:57:59a
Final results file created: 07/15/97 8:58:39a

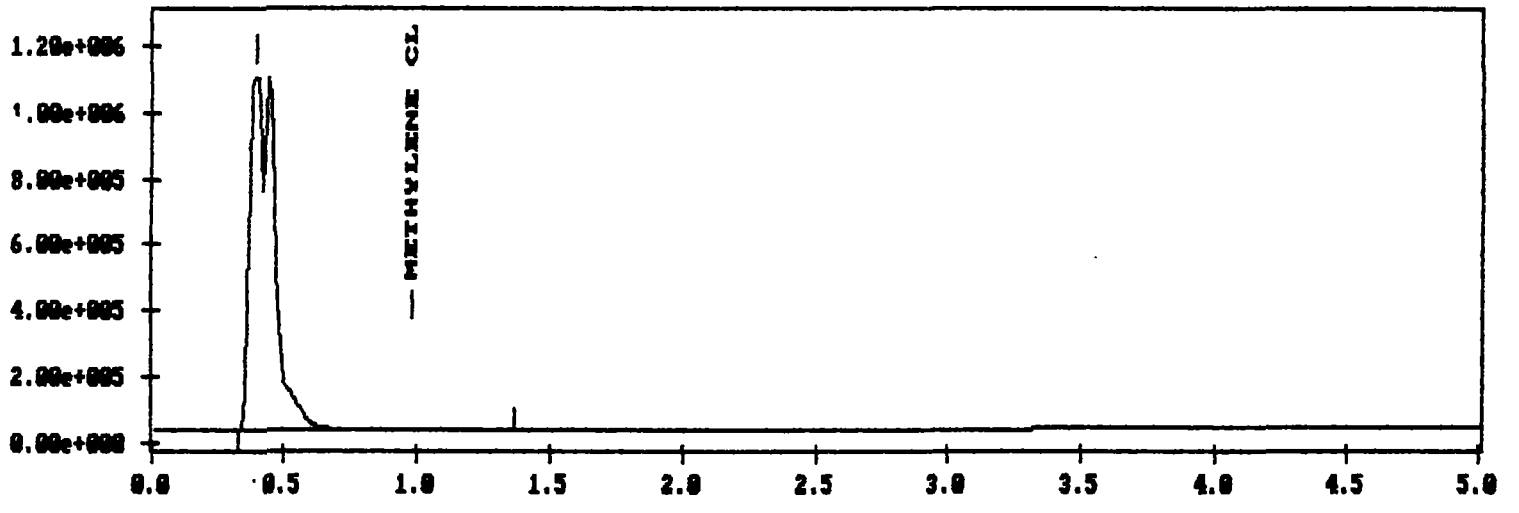
Name: DETECTION BY ECD
mment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : A-3-13' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.980	METHYLENE CL	1.536372	9445.14746	1257.13623

*** Concentration Report for << 7-15009A >>, Printed: 07/15/97 9:32:07a ***

Raw data file created: 07/15/97 9:25:12a Injected: 07/15/97 9:20:06a
Detection results file created: 07/15/97 9:31:23a
Final results file created: 07/15/97 9:31:55a

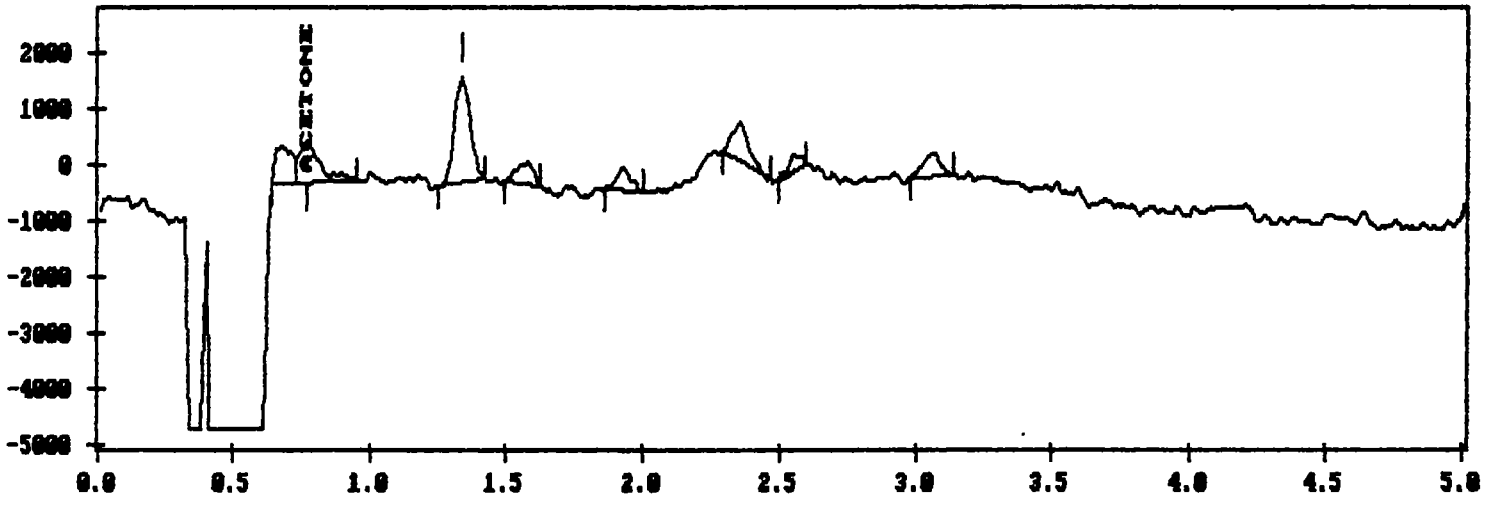
Name: DETECTION BY PID
mment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : A-4-12' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/15/97 8:34:39a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.770	ACETONE	9.913551	3263.45825	732.500000
NF	CHLOROBENZENE	Not Found	Not Found	Not Found

*** Concentration Report for << 7-15010A >>, Printed: 07/15/97 9:27:52a ***

Raw data file created: 07/15/97 9:25:12a Injected: 02/05/206 10:28:16p
Detection results file created: 07/15/97 9:26:32a
Final results file created: 07/15/97 9:26:33a

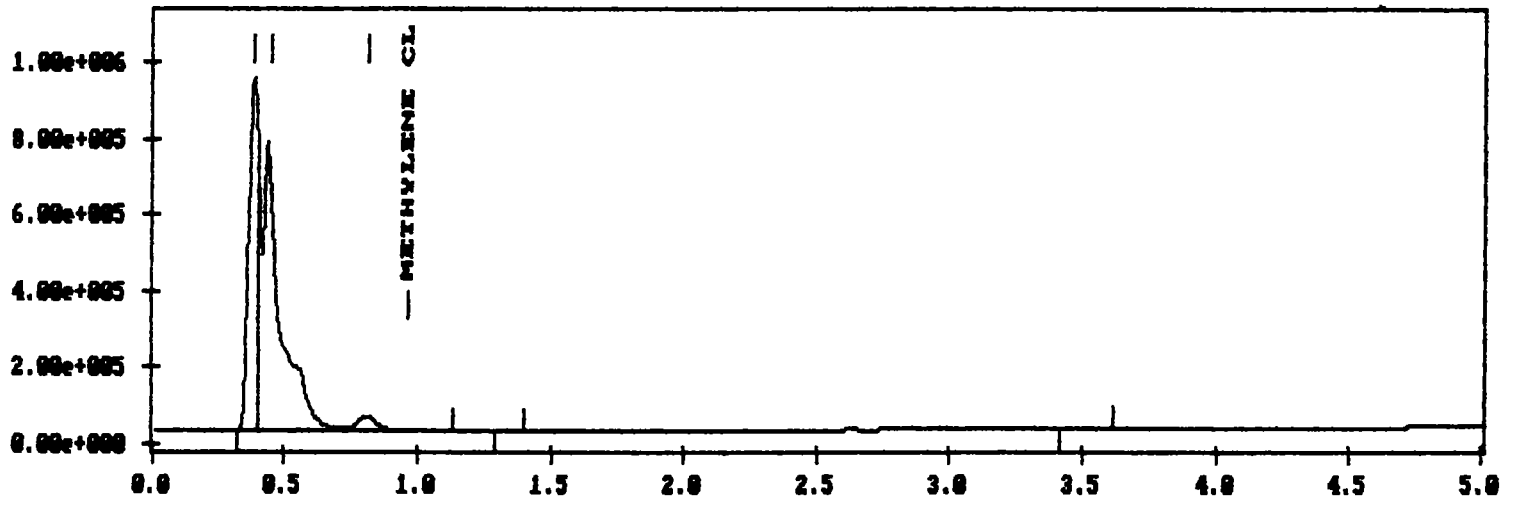
Name: DETECTION BY ECD
mment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : A-4-12' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.962	METHYLENE CL	2.344229	14411.6025	2274.15991

*** Concentration Report for << 7-15007A >>, Printed: 07/15/97 9:23:24a ***

Raw data file created: 07/15/97 9:15:52a Injected: 07/15/97 9:10:45a
Detection results file created: 07/15/97 9:22:28a
Final results file created: 07/15/97 9:23:17a

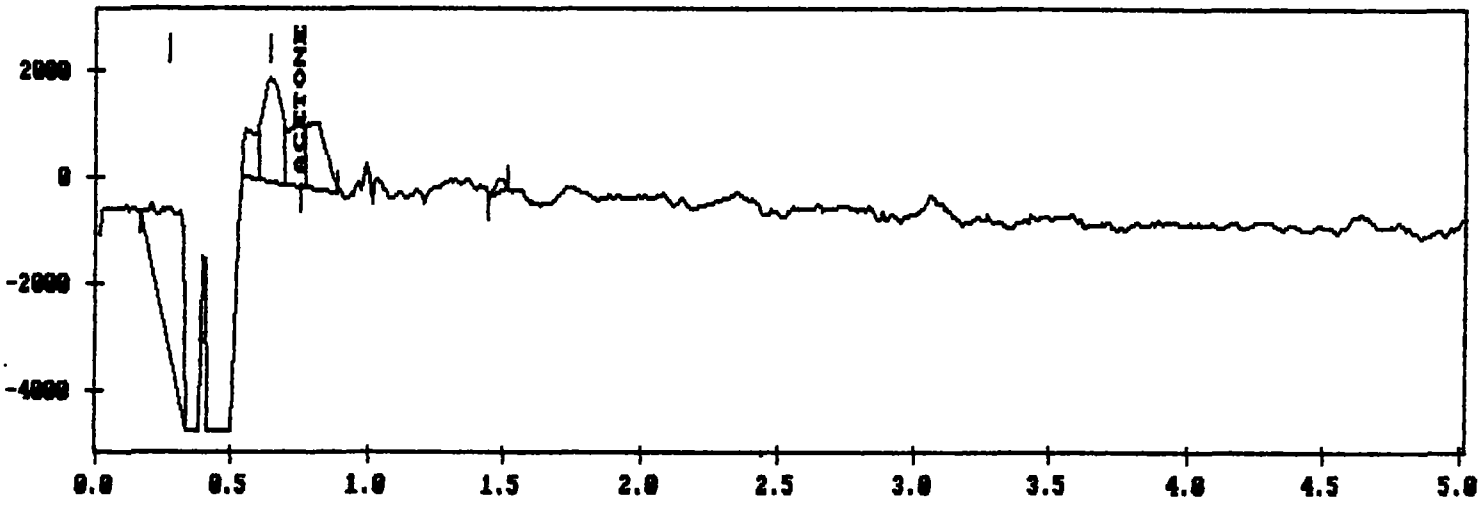
Name: DETECTION BY PID
mment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : A-4-18' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/15/97 8:34:39a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.750	ACETONE	14.818114	4877.99951	1183.42785
NF	CHLOROBENZENE	Not Found	Not Found	Not Found

*** Concentration Report for << 7-15008A >>, Printed: 07/15/97 9:30:55a ***

Raw data file created: 07/15/97 9:15:53a Injected: 02/05/206 10:28:16p
Detection results file created: 07/15/97 9:28:40a
Final results file created: 07/15/97 9:30:05a

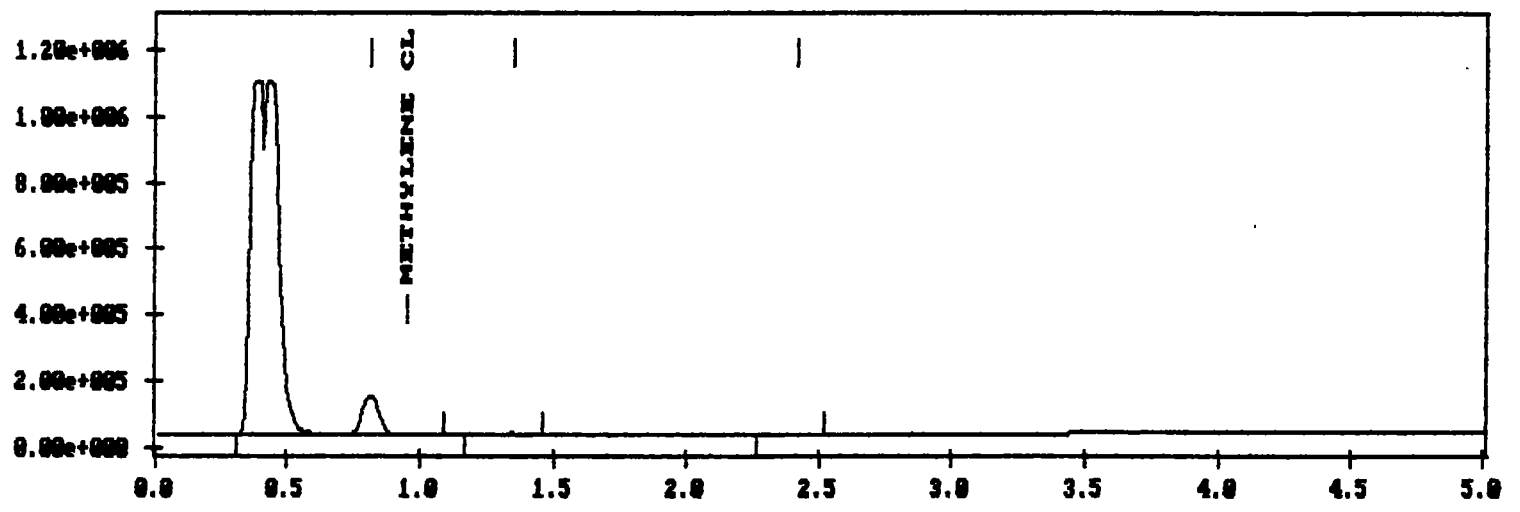
Name: DETECTION BY ECD
mment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : A-4-18' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.950	METHYLENE CL	2.116734	13013.0302	3194.93383

*** Concentration Report for << 7-15011A >>, Printed: 07/15/97 9:47:23a ***

Raw data file created: 07/15/97 9:45:09a Injected: 07/15/97 9:40:03a
Detection results file created: 07/15/97 9:46:08a
Final results file created: 07/15/97 9:47:12a

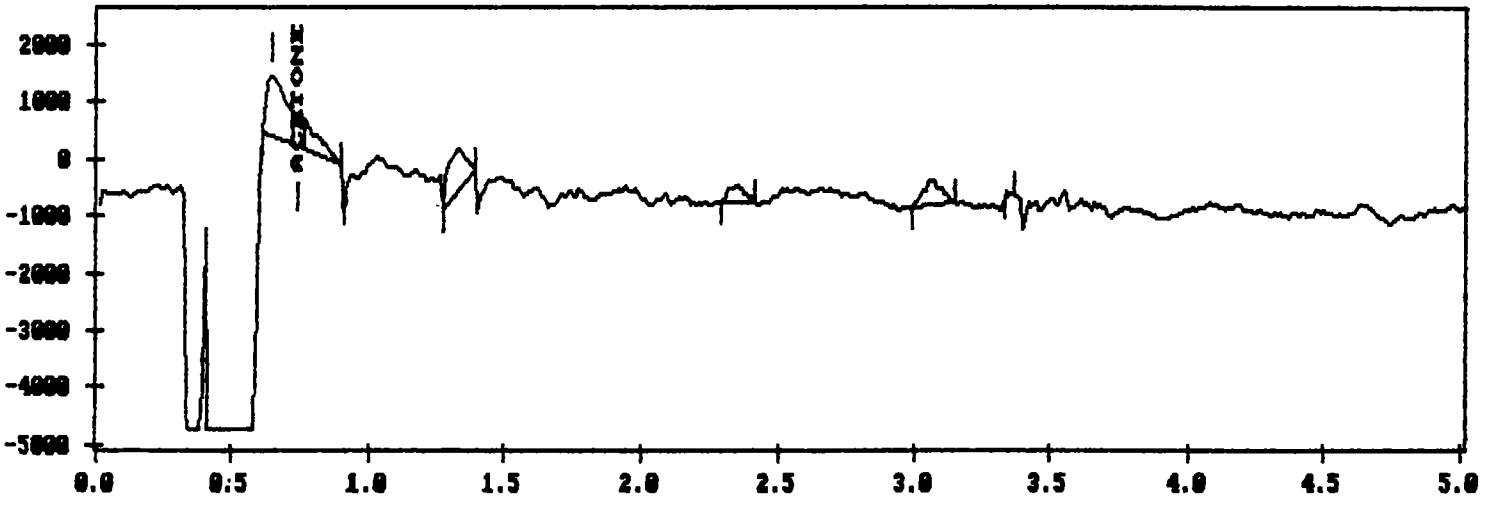
Name: DETECTION BY PID
mment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : A-5-12' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/15/97 8:34:39a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.740	ACETONE	3.527923	1161.36279	572.427490
NF	CHLOROBENZENE	Not Found	Not Found	Not Found

*** Concentration Report for << 7-15012A >>, Printed: 07/15/97 9:48:12a ***

Raw data file created: 07/15/97 9:45:10a Injected: 02/05/206 10:28:16p
Detection results file created: 07/15/97 9:47:59a
Final results file created: 07/15/97 9:48:01a

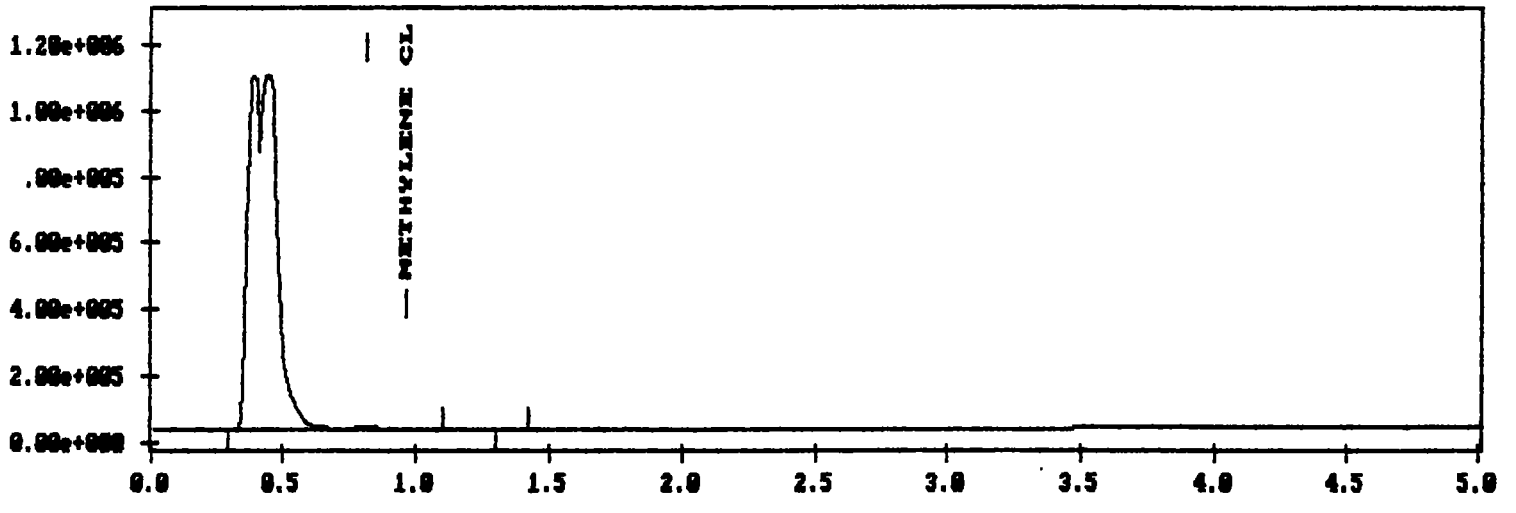
Name: DETECTION BY ECD
mment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : A-5-12' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.963	METHYLENE CL	1.998186	12284.2382	2458.12597

*** Concentration Report for << 7-15013A >>, Printed: 07/15/97 10:48:56a ***

Raw data file created: 07/15/97 10:37:49a Injected: 07/15/97 10:32:43a
Detection results file created: 07/15/97 10:48:16a
Final results file created: 07/15/97 10:48:50a

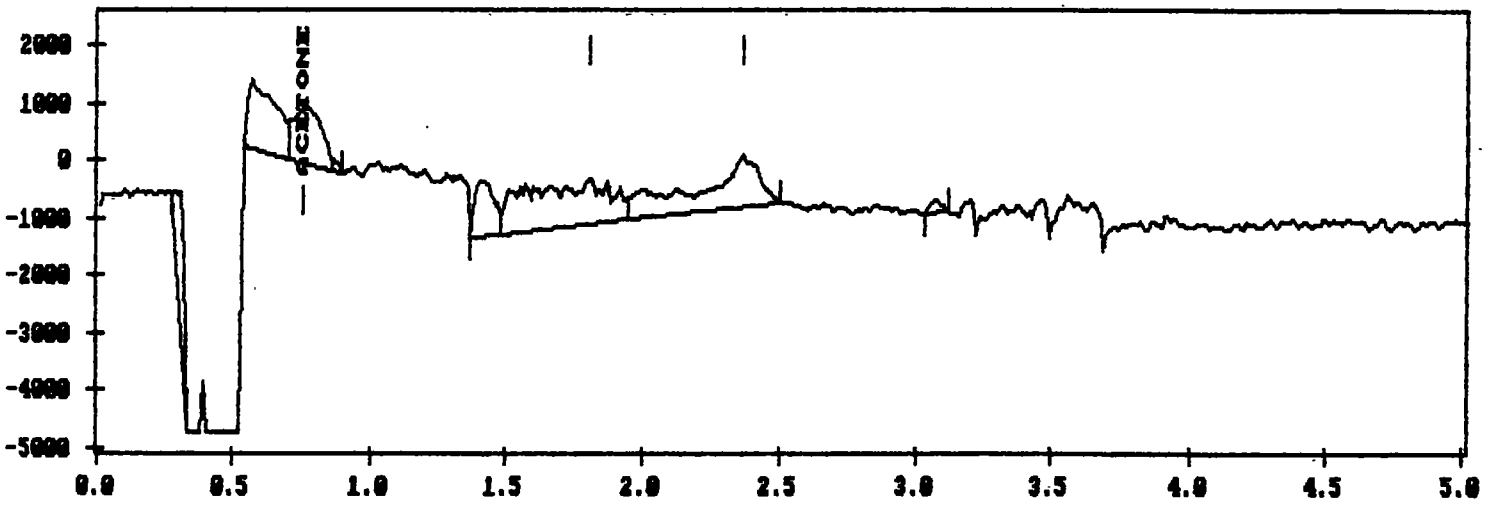
Name: DETECTION BY PID
Comment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : A-6-10.5' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/15/97 8:34:39a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.760	ACETONE	20.382214	6709.65429	981.838867
NF	CHLOROBENZENE	Not Found	Not Found	Not Found

*** Concentration Report for << 7-15014A >>, Printed: 07/15/97 11:05:57a ***

Raw data file created: 07/15/97 10:37:49a Injected: 02/05/206 10:28:16p
Detection results file created: 07/15/97 10:49:21a
Final results file created: 07/15/97 11:05:46a

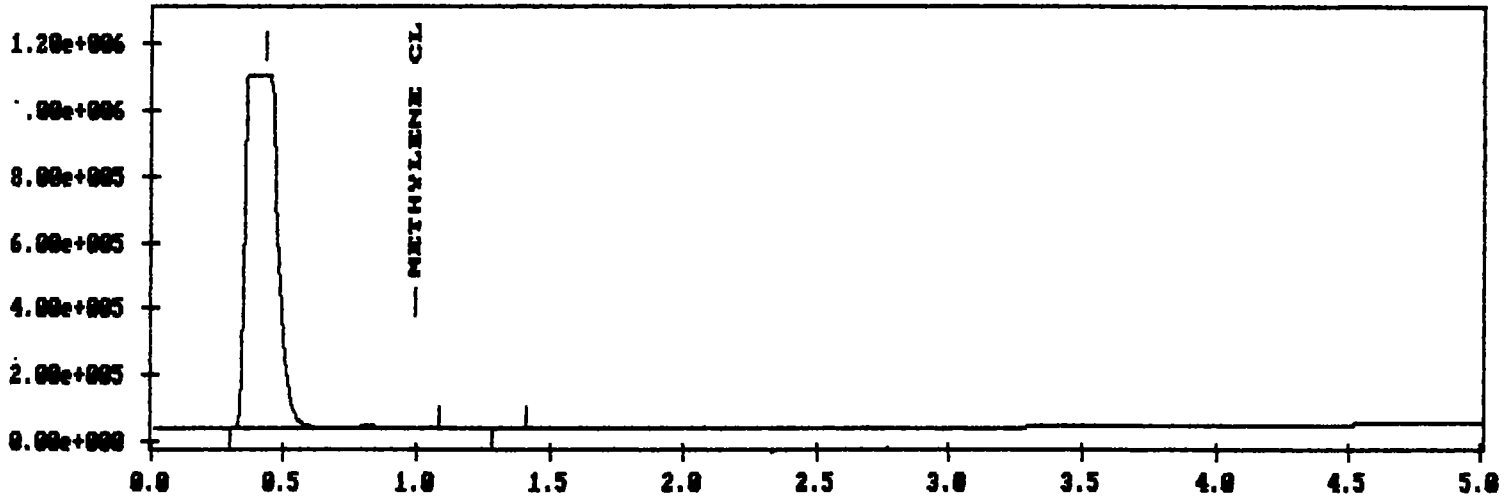
Name: DETECTION BY ECD
Comment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : A-6-10.5' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.990	METHYLENE CL	0.344424	2117.41210	494.061401

*** Concentration Report for << 7-15015A >>, Printed: 07/15/97 11:41:49a ***

Raw data file created: 07/15/97 11:39:24a Injected: 07/15/97 11:34:18a
Detection results file created: 07/15/97 11:41:09a
Final results file created: 07/15/97 11:41:43a

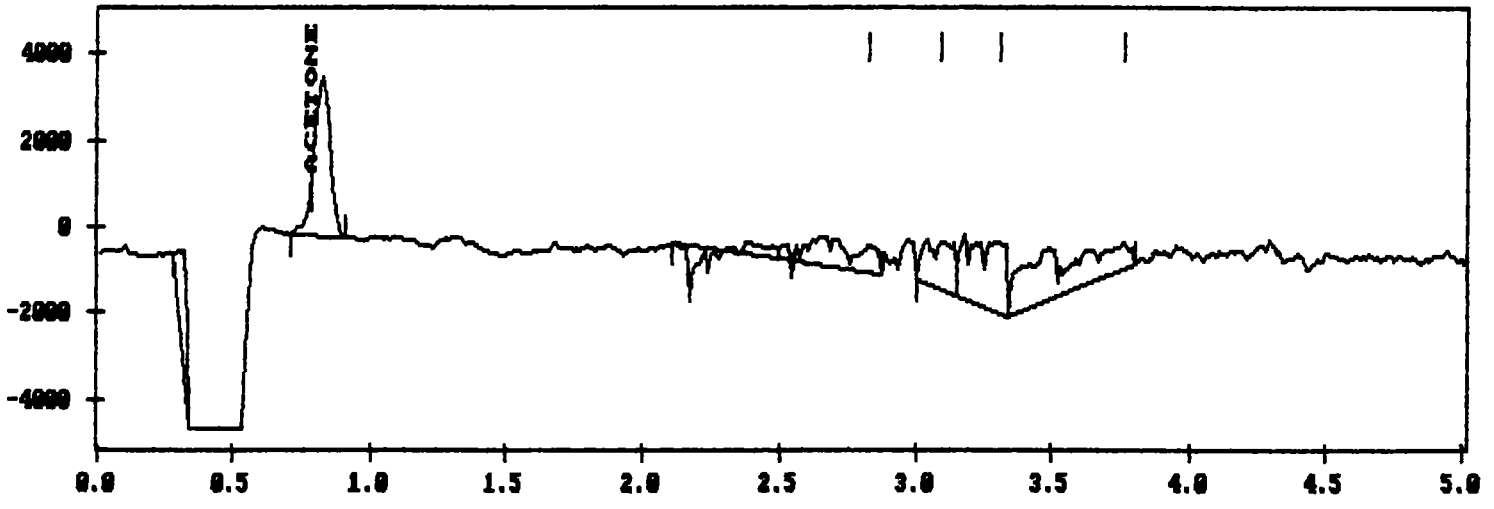
Name: DETECTION BY PID
mment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : A-7-12' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/15/97 8:34:39a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.790	ACETONE	45.352543	14929.6787	1608.20007
NF	CHLOROBENZENE	Not Found	Not Found	Not Found

*** Concentration Report for << 7-15016A >>, Printed: 07/15/97 11:40:40a ***

Raw data file created: 07/15/97 11:39:25a Injected: 02/05/206 10:28:16p
Detection results file created: 07/15/97 11:40:15a
Final results file created: 07/15/97 11:40:31a

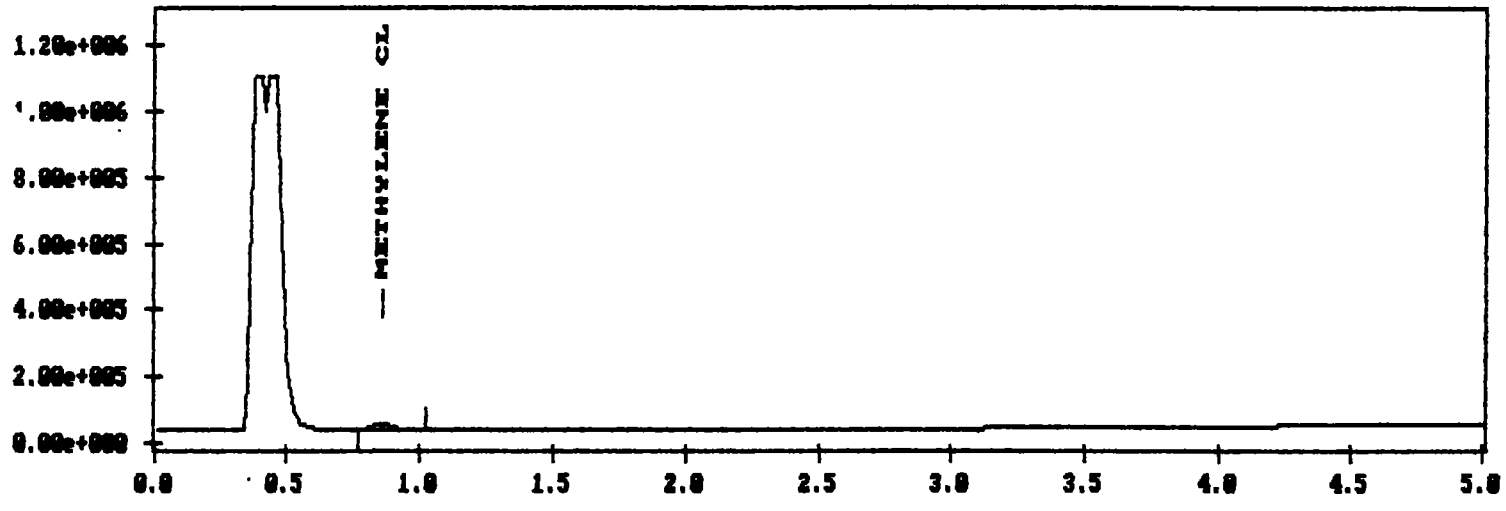
Name: DETECTION BY ECD
mment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : A-7-12' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.855	METHYLENE CL	17.448168	107266.000	21315.3691

APPENDIX 5

SYSTEM CALIBRATION DATA

*** Concentration Report for << 7-15001A >>, Printed: 07/15/97 7:55:17a ***

Raw data file created: 07/15/97 7:52:19a Injected: 07/15/97 7:47:12a
Detection results file created: 07/15/97 7:55:04a
Final results file created: 07/15/97 7:55:06a

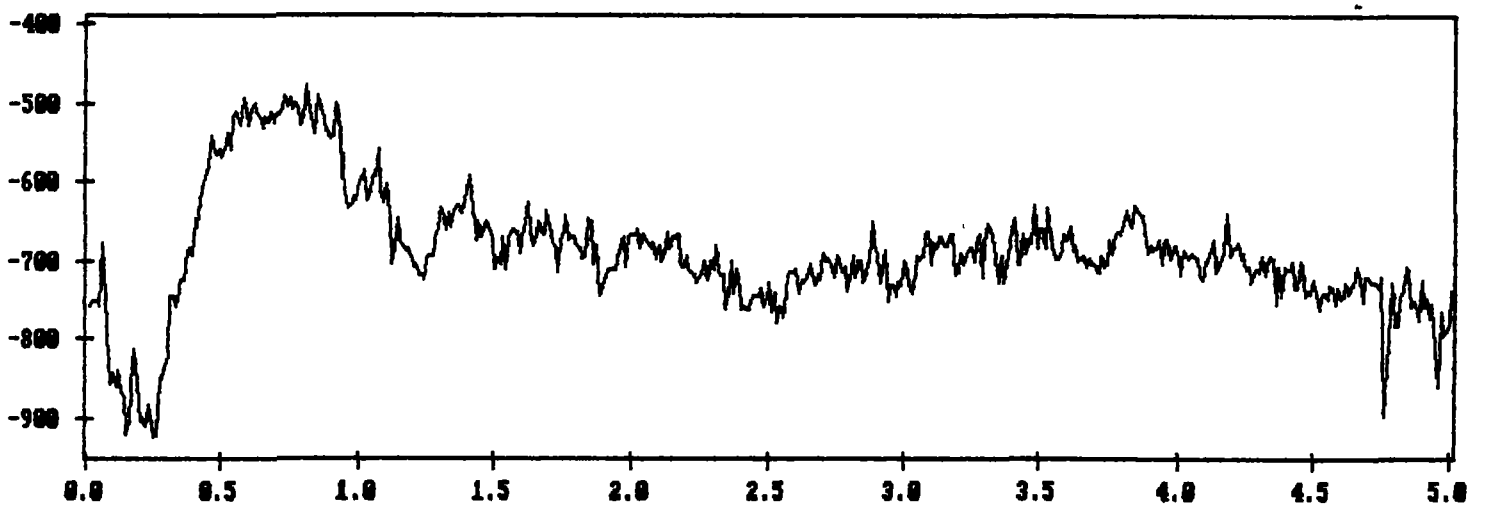
Name: DETECTION BY PID
ment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : system blank
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/14/97 10:59:37a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
NF	ACETONE	Not Found	Not Found	Not Found
NF	CHLOROBENZENE	Not Found	Not Found	Not Found

*** Concentration Report for << 7-15002A >>, Printed: 07/15/97 7:56:30a ***

Raw data file created: 07/15/97 7:52:19a Injected: 02/05/206 10:28:16p
Detection results file created: 07/15/97 7:56:22a
Final results file created: 07/15/97 7:56:23a

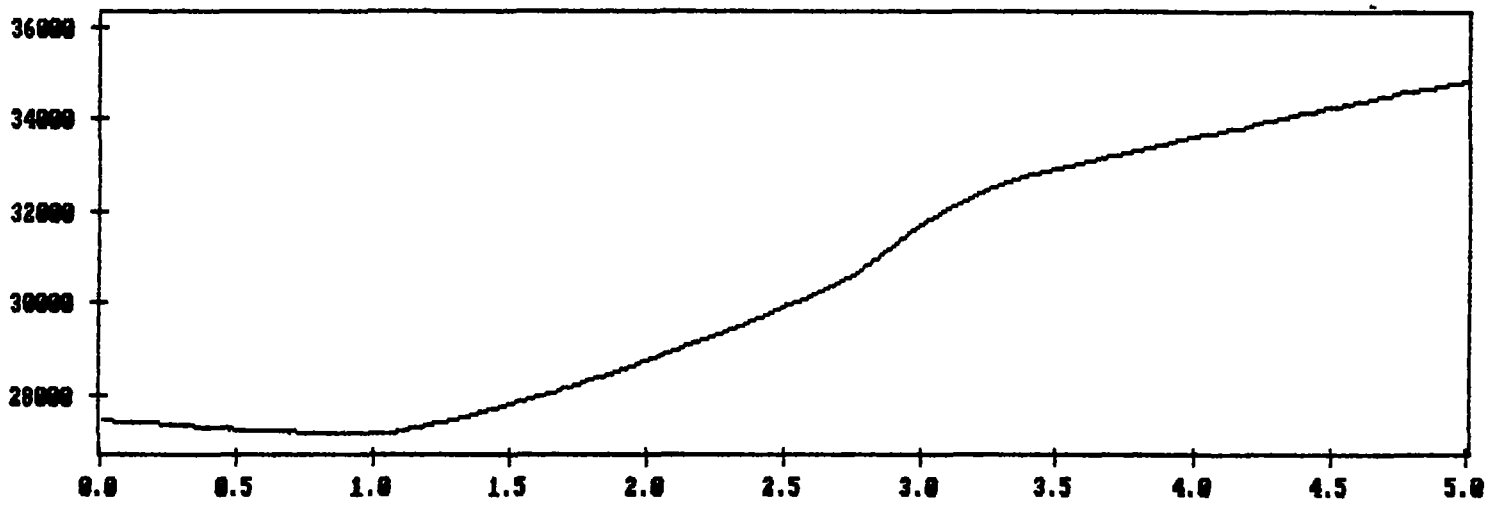
Name: DETECTION BY ECD
ment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : system blank
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
NF	METHYLENE CL	Not Found	Not Found	Not Found

*** Concentration Report for << 7-14001A >>, Printed: 07/14/97 11:22:43a ***

Raw data file created: 07/14/97 9:55:25a Injected: 07/14/97 9:50:18a
Detection results file created: 07/14/97 11:22:35a
Final results file created: 07/14/97 11:22:37a

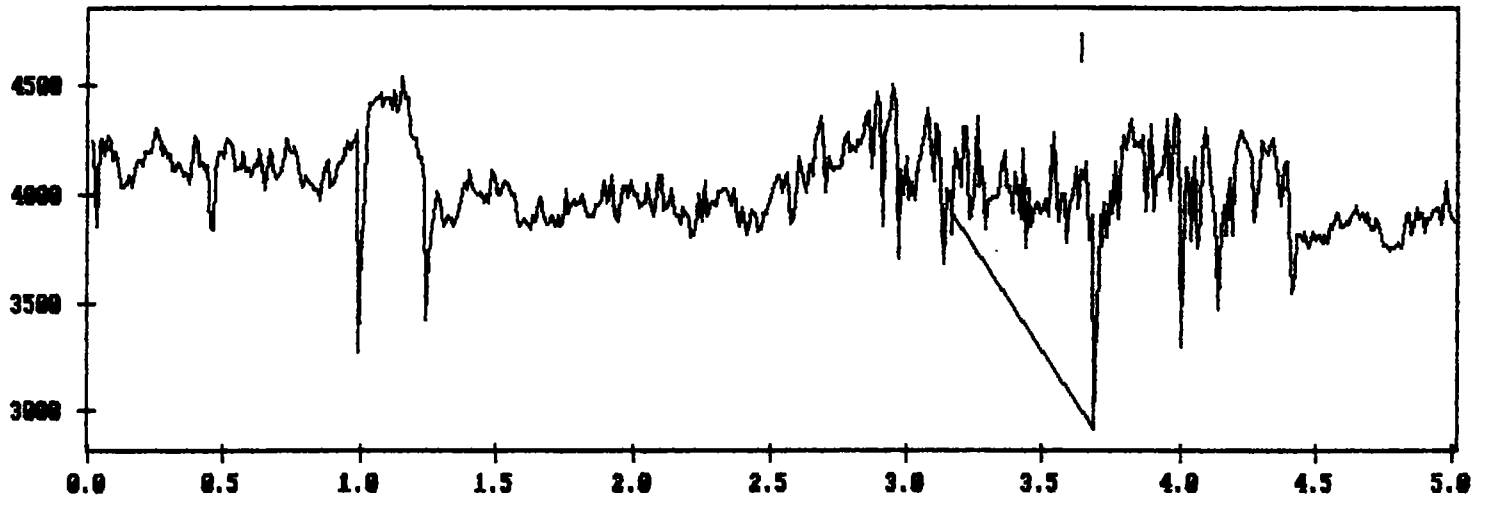
Name: DETECTION BY PID
nment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : system blank
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/14/97 10:59:37a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
NF	ACETONE	Not Found	Not Found	Not Found
NF	CHLOROBENZENE	Not Found	Not Found	Not Found

*** Concentration Report for << 7-14002A >>, Printed: 07/14/97 11:19:44a ***

Raw data file created: 07/14/97 9:55:25a Injected: 02/05/206 10:28:16p
Detection results file created: 07/14/97 11:19:36a
Final results file created: 07/14/97 11:19:38a

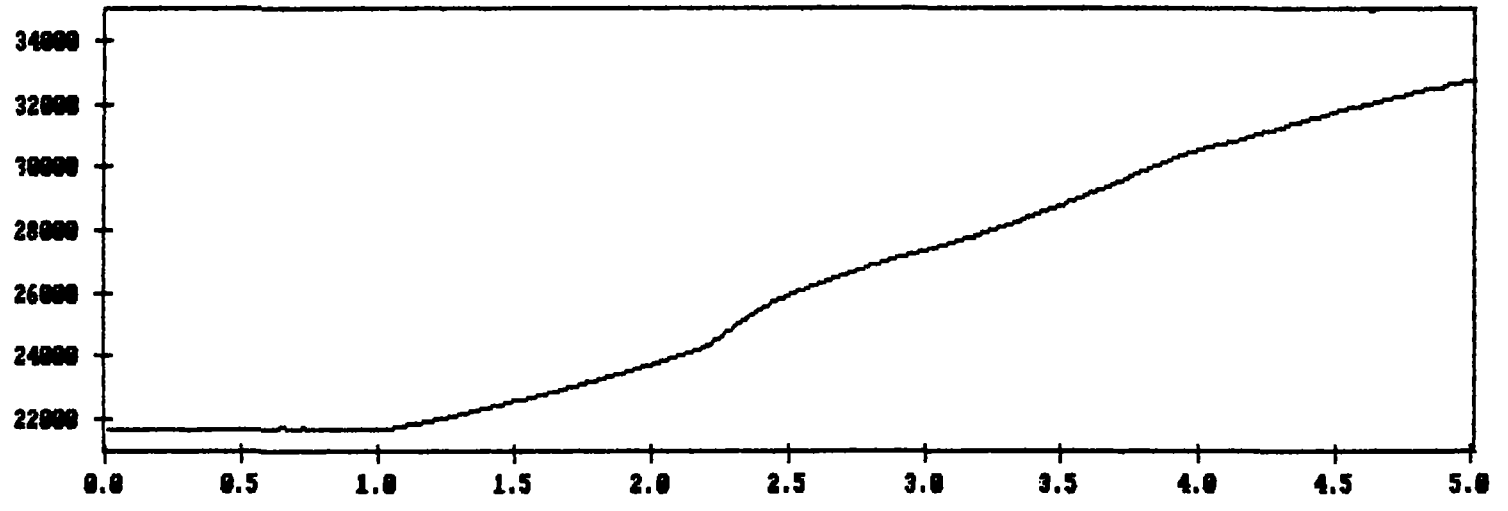
Name: DETECTION BY ECD
ment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : system blank
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
NF	METHYLENE CL	Not Found	Not Found	Not Found

*** Concentration Report for << 7-10003A >>, Printed: 07/14/97 11:24:04a ***

Raw data file created: 07/11/97 2:42:01p Injected: 07/11/97 2:31:55p
Detection results file created: 07/14/97 11:23:55a
Final results file created: 07/14/97 11:23:57a

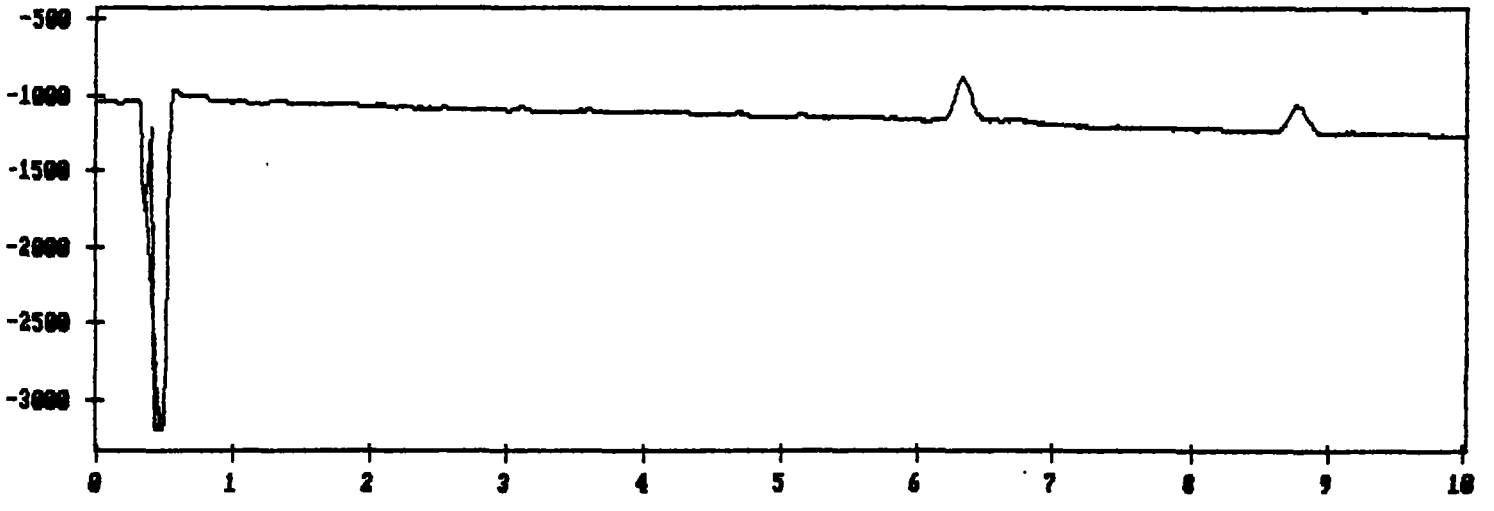
Name: DETECTION BY PID
ıment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : REAGENT BLANK
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/14/97 10:59:37a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
NF	ACETONE	Not Found	Not Found	Not Found
NF	CHLOROBENZENE	Not Found	Not Found	Not Found

*** Concentration Report for << 7-10004A >>, Printed: 07/14/97 11:24:37a ***

Raw data file created: 07/11/97 2:42:01p Injected: 02/05/206 10:28:16p
Detection results file created: 07/14/97 11:24:29a
Final results file created: 07/14/97 11:24:30a

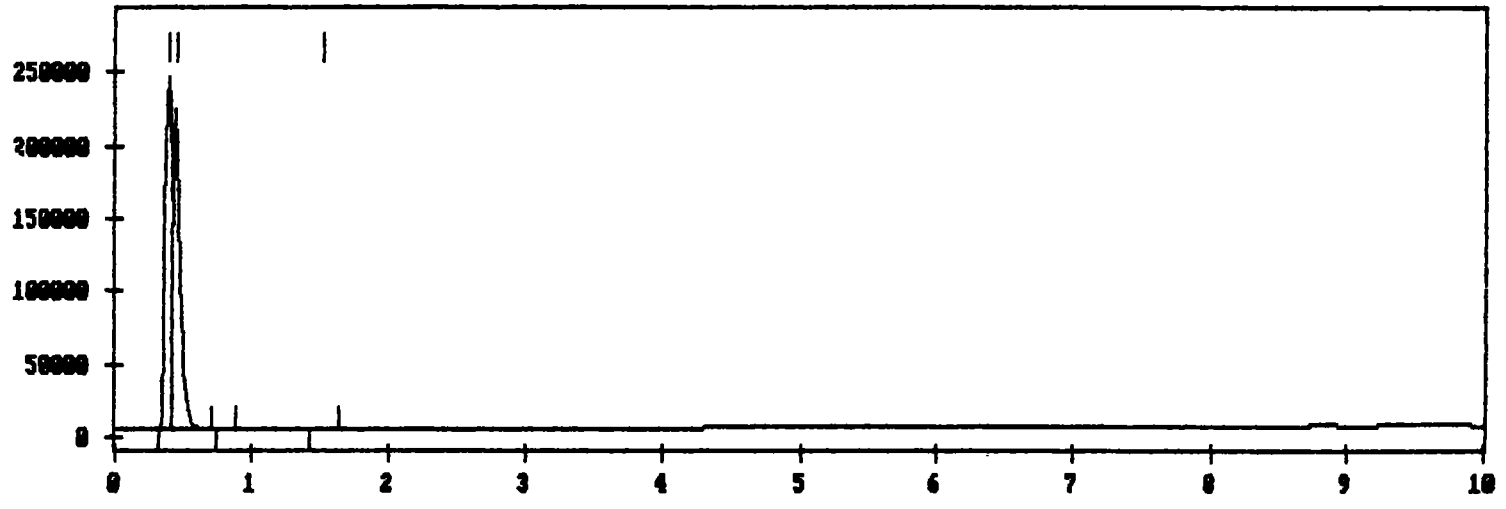
Name: DETECTION BY ECD
ıment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : REAGENT BLANK
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
NF	METHYLENE CL	Not Found	Not Found	Not Found

----- Acquisition Method Report -----
07/14/97 11:12:00a

<< LAYN-SOL >>
Created: 07/11/97 1:58:51p
Last modified: 07/13/97 12:04:09p

Name: solvents for layne-verona mo
Comment: ACETONE, DICHLOROMETHANE, CHLOROBENZENE

Acquisition rate: 0.60 sec/pt
Runtime: 5.00 min

Channel A detector range: 1.00 volt(s)
Channel B detector range: 1.00 volt(s)

Use sample table: No
Set monitor range: No
Process raw data at upload: No

Time (min)	Event Type	Relay
0.00	Off	1

----- Integration Section Report -----
07/14/97 11:12:01a

<< LAYN-PHH >>
Created: 07/13/97 12:47:37p
Last modified: 07/13/97 12:48:54p

Name: DETECTION BY PID
Comment: ACETONE AND CHLOROBENZENE

Peak width: 5.0000 sec
Slope threshold: 50.0000 uV / sec
Area threshold: 5000.00 uV sec

Time (min)	Event Type	Value
0.00	PD	ON

------ Component Section Report ------
07/14/97 11:12:01a

<< LAYN-PHH >>

Created: 07/13/97 12:47:38p
Last modified: 07/14/97 10:59:37a

Name: DETECTION BY PID
Comment: ACETONE AND CHLOROBENZENE

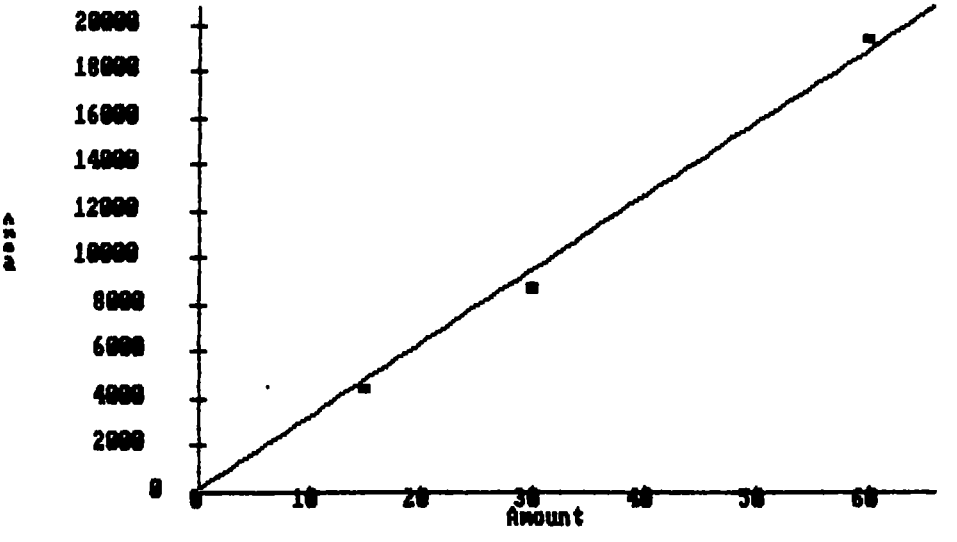
Expected IS amount: 0.000000

---------- ACETONE ----------

Expected retention time (min): 0.730

Absolute search window (min): 0.000
Relative search window (%) : 10.00

Level	Amount	Area	Area/Amount	Used?
1	15.000000	4304.197754	286.946503	Yes
2	30.000000	8581.037109	286.034576	Yes
3	60.000000	19229.152344	320.485870	Yes



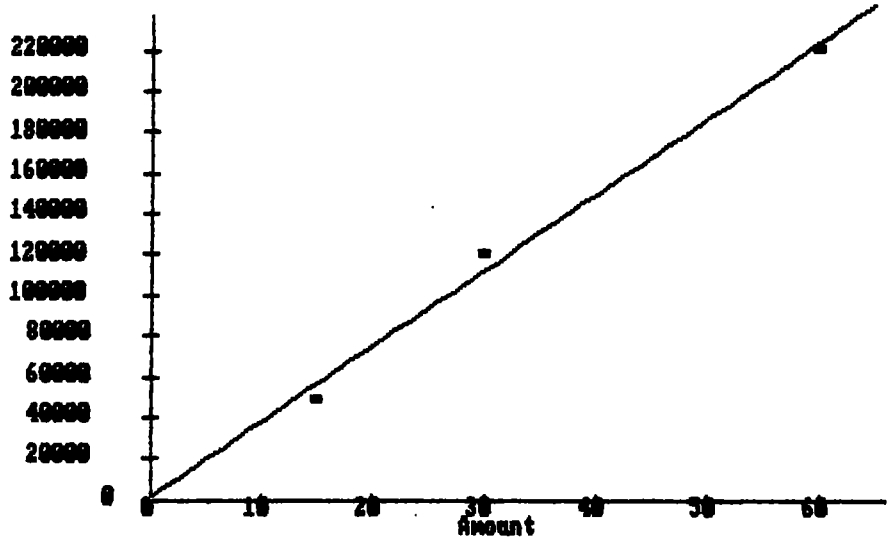
Calibration equation: 312.326599x
Curve type: Linear forced through origin
Weighting: Equal
Correlation coefficient: 0.955397

CHLOROBENZENE

Expected retention time (min): 4.327

Absolute search window (min): 0.000
Relative search window (%) : 10.00

Level	Amount	Area	Area/Amount	Used?
1	15.000000	48174.171875	3211.611572	Yes
2	30.000000	118996.22656	3966.540771	Yes
3	60.000000	219169.56250	3652.825928	Yes



Calibration equation: 3691.571045x
Curve type: Linear forced through origin
Weighting: Equal
Correlation coefficient: 0.957793

*** Report Section for << LAYN-PHH >>, Printed: 07/14/97 11:12:12a ***

Created: 07/13/97 12:47:37p
Last modified: 07/13/97 12:49:18p

Print header fields: Yes

Creation times: Yes
ID name: Yes
Processing method header comment: Yes
Instrumentation comment: No
Processing method comment: No
Interface information: No
Acquisition method name: Yes
Sample table name: No
Sample name: Yes
Sample parameters: Yes
IS amount (Calib): No
Adjusted amount multiplier: No
Default response factor: No
Processing method information: Yes
Peak numbers: No

Print chromatogram: Yes

Number of plots: 1
Chromatogram orientation: Portrait
Chromatogram height (cm): 8.0
Print superior peak labels: Component Name
Print inferior peak labels: None
Superior label position: Upper boundary
Print chromatogram baseline: Yes
Print baseline detection marks: Yes
Print search windows: No
Print integration events: No
Print table for each plot: No
Default Floor: Minimum point
Plot boundaries: Default

Print peak group tables: No
Print full results table: Yes

Print unknown peaks: No
Print unmatched components: Yes
Align fields along decimal: No
Use default response peak: No
Default response type: Area
Adjusted amount multiplier: 1.000000
Default response factor: 0.000000

Print totals from tables: No

For Peak Groups, Calculate % and Norms Using: All Peaks
For Plot Windows, Calculate % and Norms Using: All Peaks
Form feed after header: No
Form feed after chromatogram: No
Form feed after report: Yes
Print over perforation: No

Report Columns

: Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)

*** Concentration Report for << 7-14013A >>, Printed: 07/14/97 11:12:13a ***

Raw data file created: 07/14/97 11:05:55a Injected: 07/14/97 11:00:48a
Detection results file created: 07/14/97 11:06:18a
Final results file created: 07/14/97 11:10:51a

Name: DETECTION BY PID
ament: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : calibration 30 ppb
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/14/97 10:59:37a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p
Chromatogram baseline is manually edited

Superior peak labels: Component Name

FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.730	ACETONE	30.000000	8581.03710	2144.66796
4.327	CHLOROBENZENE	30.000000	118996.226	21116.8496

----- Acquisition Method Report -----
07/14/97 11:18:46a

<< LAYN-SOL >>
Created: 07/11/97 1:58:51p
Last modified: 07/13/97 12:04:09p

Name: solvents for layne-verona mo
Comment: ACETONE, DICHLOROMETHANE, CHLOROBENZENE

Acquisition rate: 0.60 sec/pt
Runtime: 5.00 min

Channel A detector range: 1.00 volt(s)
Channel B detector range: 1.00 volt(s)

Use sample table: No
Set monitor range: No
Process raw data at upload: No

Time (min)	Event Type	Relay
0.00	Off	1

----- Integration Section Report -----
07/14/97 11:18:47a

<< LAYN-EHH >>
Created: 07/13/97 12:58:45p
Last modified: 07/13/97 12:59:32p

Name: DETECTION BY ECD
Comment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Peak width: 5.0000 sec
Slope threshold: 50.0000 uV / sec
Area threshold: 5000.00 uV sec

Time (min)	Event Type	Value
0.00	PD	ON

------ Component Section Report ------
07/14/97 11:18:47a

<< LAYN-EHH >>

Created: 07/13/97 12:58:46p
Last modified: 07/14/97 11:17:02a

Name: DETECTION BY ECD
Comment: METHYLENE CHLORIDE (DICHLOROMETHANE)

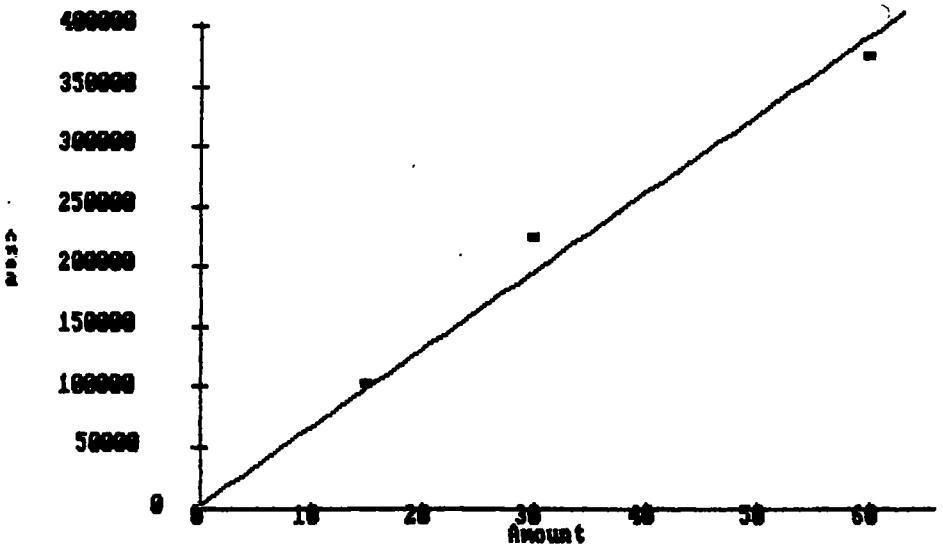
Expected IS amount: 0.000000

---------- METHYLENE CL ----------

Expected retention time (min): 0.881

Absolute search window (min): 0.000
Relative search window (%) : 10.00

Level	Amount	Area	Area/Amount	Used?
1	15.000000	100466.89843	6697.793457	Yes
2	30.000000	222034.78125	7401.159180	Yes
3	60.000000	372769.81250	6212.830078	Yes



Calibration equation: 6462.271973x
Curve type: Linear forced through origin
Weighting: Equal
Correlation coefficient: 0.932787

*** Report Section for << LAYN-EHH >>, Printed: 07/14/97 11:18:53a ***

Created: 07/13/97 12:58:45p
Last modified: 07/13/97 12:59:46p

Print header fields: Yes

Creation times: Yes
ID name: Yes
Processing method header comment: Yes
Instrumentation comment: No
Processing method comment: No
Interface information: No
Acquisition method name: Yes
Sample table name: No
Sample name: Yes
Sample parameters: Yes
IS amount (Calib): No
Adjusted amount multiplier: No
Default response factor: No
Processing method information: Yes
Peak numbers: No

Print chromatogram: Yes

Number of plots: 1
Chromatogram orientation: Portrait
Chromatogram height (cm): 8.0
Print superior peak labels: Component Name
Print inferior peak labels: None
Superior label position: Upper boundary
Print chromatogram baseline: Yes
Print baseline detection marks: Yes
Print search windows: No
Print integration events: No
Print table for each plot: No
Default Floor: Minimum point
Plot boundaries: Default

Print peak group tables: No
Print full results table: Yes

Print unknown peaks: No
Print unmatched components: Yes
Align fields along decimal: No
Use default response peak: No
Default response type: Area
Adjusted amount multiplier: 1.000000
Default response factor: 0.000000

Print totals from tables: No

For Peak Groups, Calculate % and Norms Using: All Peaks
For Plot Windows, Calculate % and Norms Using: All Peaks
Form feed after header: No
Form feed after chromatogram: No
Form feed after report: Yes
Print over perforation: No

Report Columns

: Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)

*** Concentration Report for << 7-14012A >>, Printed: 07/14/97 11:18:54a ***

Raw data file created: 07/14/97 10:58:10a Injected: 02/05/206 10:28:16p
Detection results file created: 07/14/97 11:18:18a
Final results file created: 07/14/97 11:18:25a

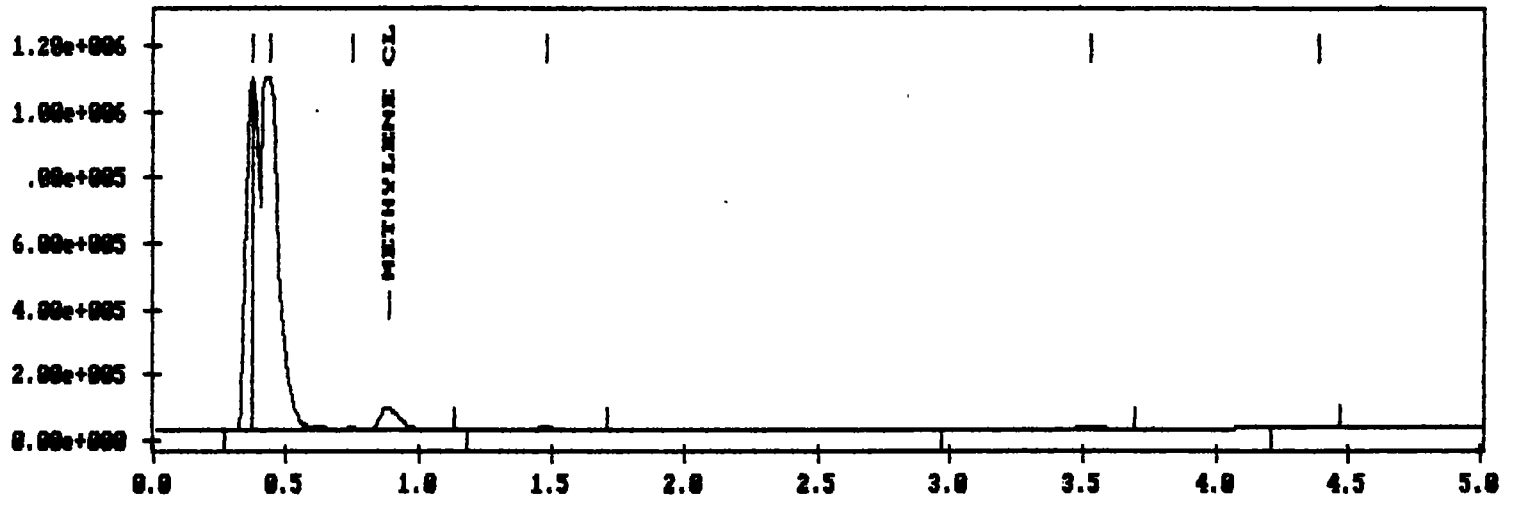
Name: DETECTION BY ECD
mment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : calibration 60 ppb
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.881	METHYLENE CL	60.000000	372769.812	69031.2187

------ Update Standards Report ------
07/15/97 8:39:24a

Final Results file name : 7-15003A, created 07/15/97 8:39:06a
Calibration section name: LAYN-PHH, last modified 07/15/97 8:34:39a

Number of components entered : 2
Number of components found : 2
Number of unidentified peaks : 2
Number of components not found: 0

Type of level update: Replace

Type of Retention time update: Replace

Level Updated: 2

PEAKS FOUND

Component Name	Expected Time	Actual Time	Amount	Peak Response	Area or Height	Response/ Amount	Calibration Equation
ACETONE	0.732	0.760	30.000000	11237.282227	Area	374.576080	329.191650x
CHLOROBENZENE	4.334	4.359	30.000000	66302.679688	Area	2210.089355	2676.802979x

PEAKS UNKNOWN

Component Name	Expected Time	Actual Time	Amount	Peak Response	Area or Height	Response/ Amount	Calibration Equation
		0.289		17094.376953	Area	Undefined	
		1.332		5552.364746	Area	Undefined	

------ Update Standards Report ------
07/15/97 8:31:23a

Final Results file name : 7-15004A, created 07/15/97 8:31:05a
libration section name: LAYN-EHH, last modified 07/14/97 11:17:02a

Number of components entered : 1
Number of components found : 1
Number of unidentified peaks : 2
Number of components not found: 0

Type of level update: Replace

Type of Retention time update: Replace

Level Updated: 2

PEAKS FOUND

Component Name	Expected Time	Actual Time	Amount	Peak Response	Area or Height	Response/ Amount	Calibration Equation
METHYLENE CL	0.907	0.907	30.000000	172488.81250	Area	5749.626953	6147.694336x

PEAKS UNKNOWN

Component Name	Expected Time	Actual Time	Amount	Peak Response	Area or Height	Response/ Amount	Calibration Equation
		0.771		7986654.5000	Area	Undefined	
		1.503		38824.265625	Area	Undefined	

*** Concentration Report for << 7-15009A >>, Printed: 07/15/97 9:32:07a ***

Raw data file created: 07/15/97 9:25:12a Injected: 07/15/97 9:20:06a
Detection results file created: 07/15/97 9:31:23a
Final results file created: 07/15/97 9:31:55a

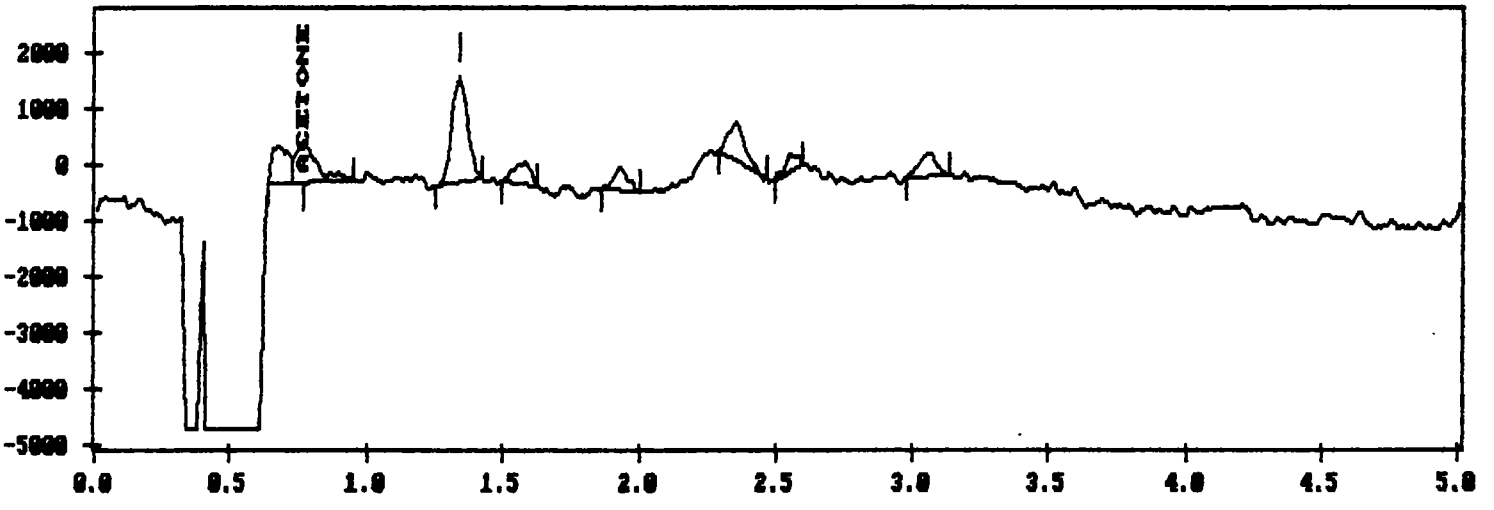
Name: DETECTION BY PID
mment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : A-4-12' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/15/97 8:34:39a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.770	ACETONE	9.913551	3263.45825	732.500000
NF	CHLOROBENZENE	Not Found	Not Found	Not Found

*** Concentration Report for << 7-15010A >>, Printed: 07/15/97 9:27:52a ***

Raw data file created: 07/15/97 9:25:12a Injected: 02/05/206 10:28:16p
Detection results file created: 07/15/97 9:26:32a
Final results file created: 07/15/97 9:26:33a

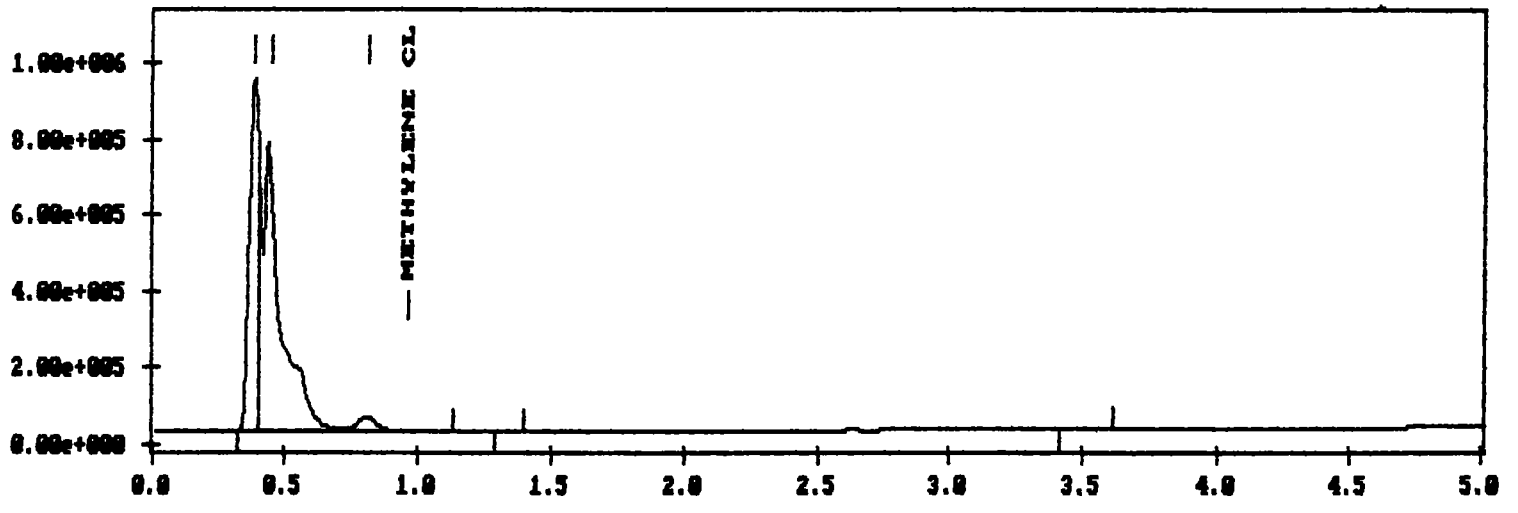
Name: DETECTION BY ECD
mment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : A-4-12' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.962	METHYLENE CL	2.344229	14411.6025	2274.15991

*** Concentration Report for << 7-15007A >>, Printed: 07/15/97 9:23:24a ***

Raw data file created: 07/15/97 9:15:52a Injected: 07/15/97 9:10:45a
Detection results file created: 07/15/97 9:22:28a
Final results file created: 07/15/97 9:23:17a

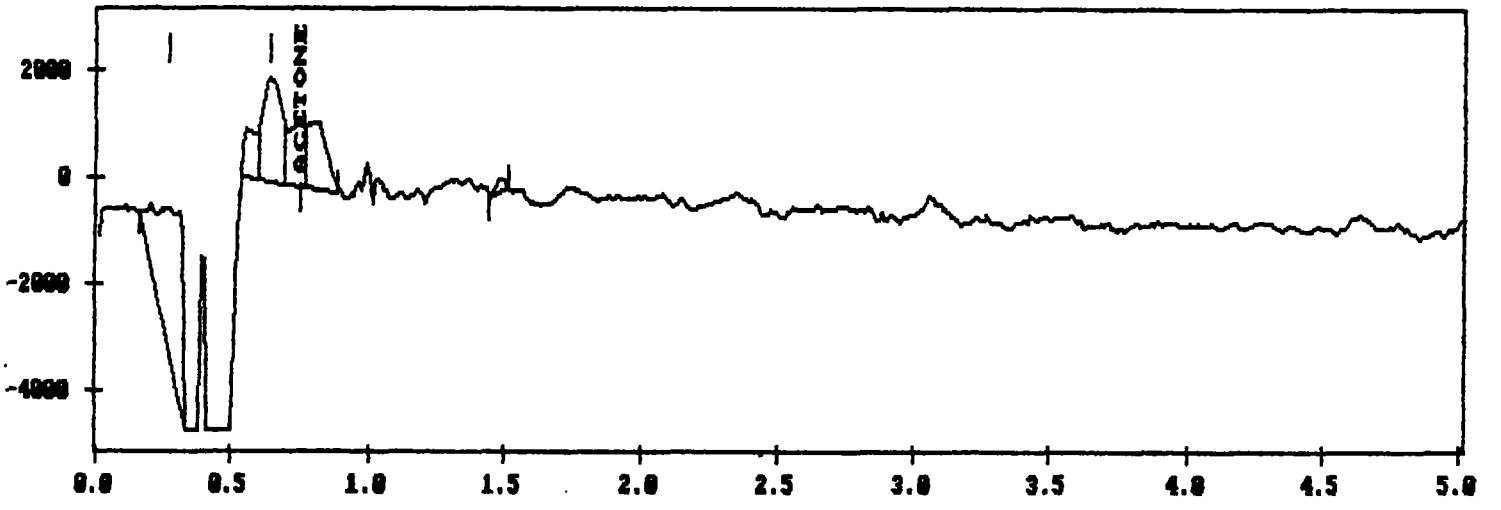
Name: DETECTION BY PID
mment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : A-4-18' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/15/97 8:34:39a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.750	ACETONE	14.818114	4877.99951	1183.42785
NF	CHLOROBENZENE	Not Found	Not Found	Not Found

*** Concentration Report for << 7-15008A >>, Printed: 07/15/97 9:30:55a ***

Raw data file created: 07/15/97 9:15:53a Injected: 02/05/206 10:28:16p
Detection results file created: 07/15/97 9:28:40a
Final results file created: 07/15/97 9:30:05a

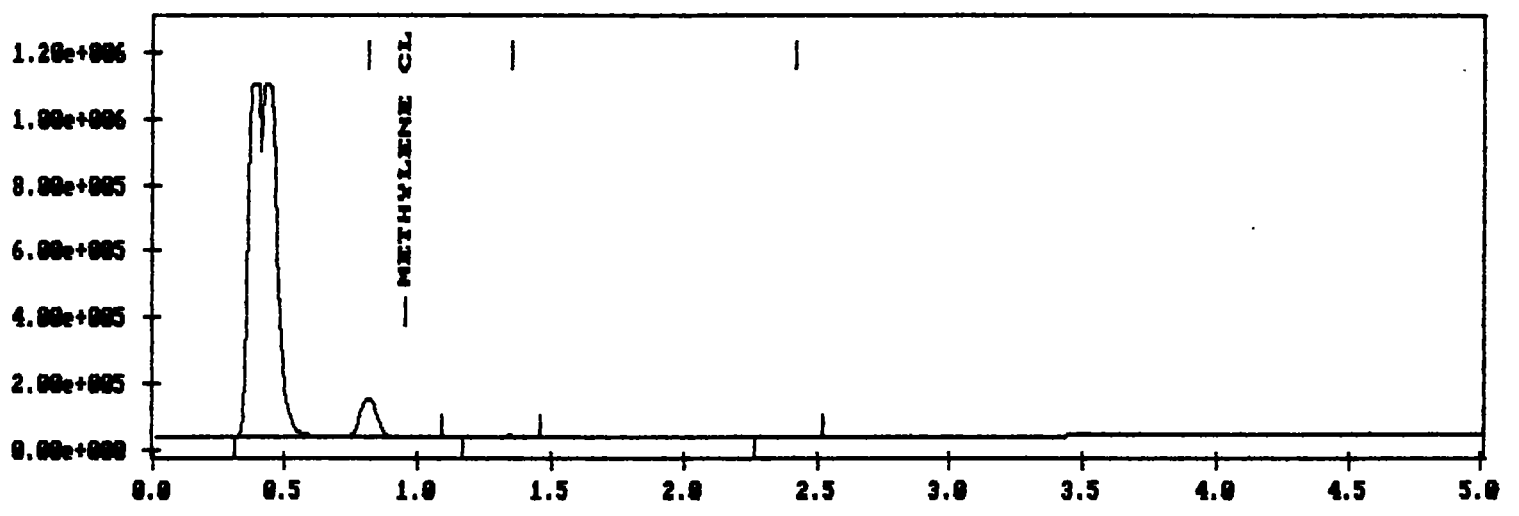
Name: DETECTION BY ECD
mment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : A-4-18' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.950	METHYLENE CL	2.116734	13013.0302	3194.93383

*** Concentration Report for << 7-15011A >>, Printed: 07/15/97 9:47:23a ***

Raw data file created: 07/15/97 9:45:09a Injected: 07/15/97 9:40:03a
Detection results file created: 07/15/97 9:46:08a
Final results file created: 07/15/97 9:47:12a

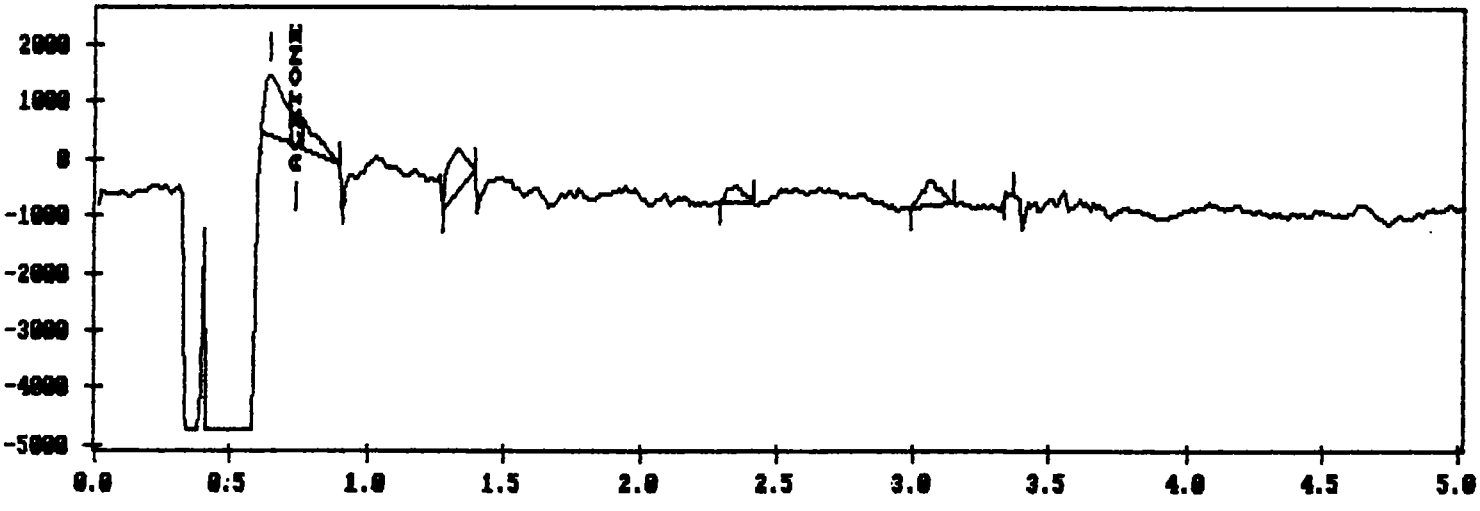
Name: DETECTION BY PID
mment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : A-5-12' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/15/97 8:34:39a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.740	ACETONE	3.527923	1161.36279	572.427490
NF	CHLOROBENZENE	Not Found	Not Found	Not Found

*** Concentration Report for << 7-15012A >>, Printed: 07/15/97 9:48:12a ***

Raw data file created: 07/15/97 9:45:10a Injected: 02/05/206 10:28:16p
Detection results file created: 07/15/97 9:47:59a
Final results file created: 07/15/97 9:48:01a

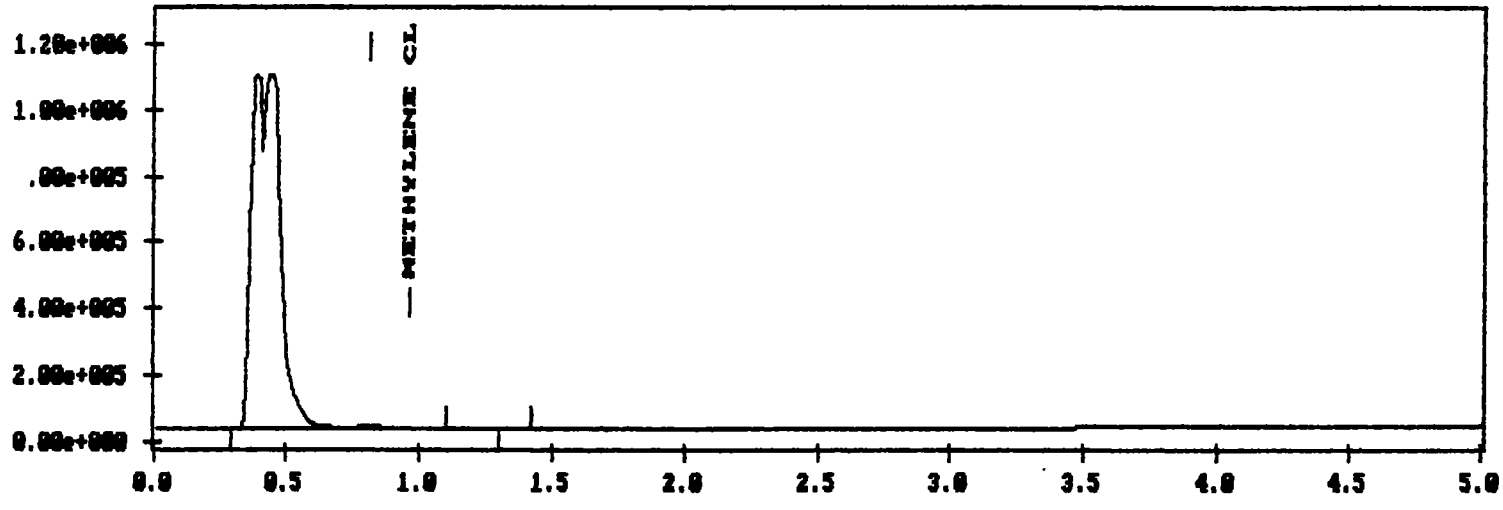
Name: DETECTION BY ECD
mment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : A-5-12' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.963	METHYLENE CL	1.998186	12284.2382	2458.12597

*** Concentration Report for << 7-15013A >>, Printed: 07/15/97 10:48:56a ***

Raw data file created: 07/15/97 10:37:49a Injected: 07/15/97 10:32:43a
Detection results file created: 07/15/97 10:48:16a
Final results file created: 07/15/97 10:48:50a

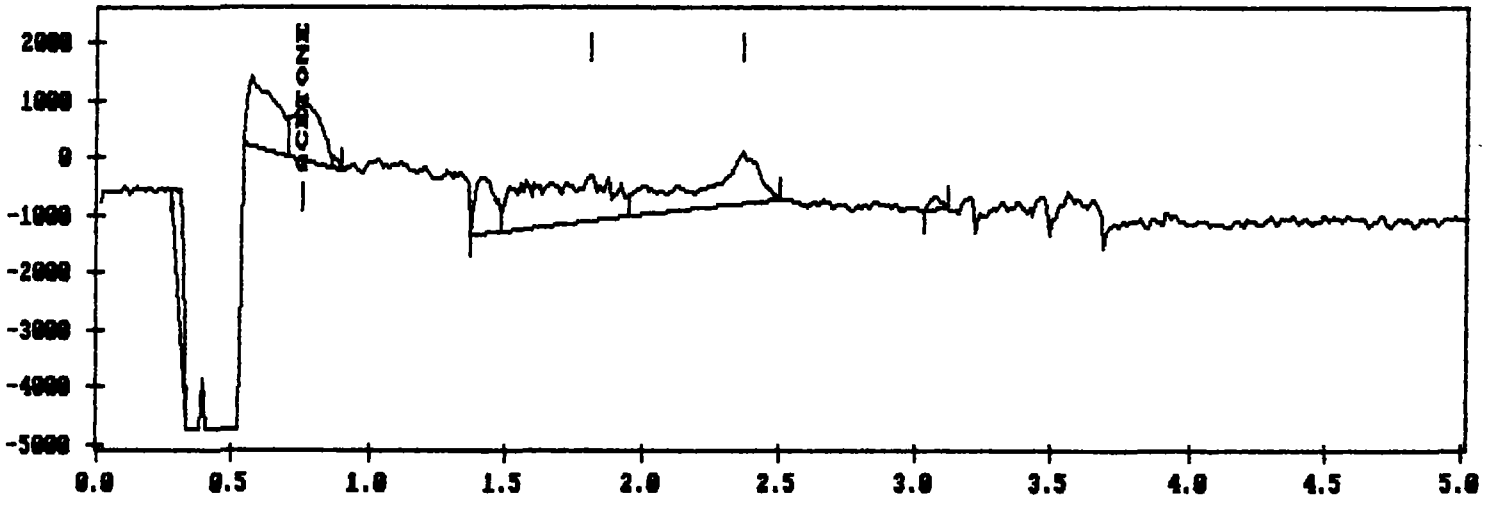
Name: DETECTION BY PID
Comment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : A-6-10.5' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/15/97 8:34:39a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.760	ACETONE	20.382214	6709.65429	981.838867
NF	CHLOROBENZENE	Not Found	Not Found	Not Found

*** Concentration Report for << 7-15014A >>, Printed: 07/15/97 11:05:57a ***

Raw data file created: 07/15/97 10:37:49a Injected: 02/05/206 10:28:16p
Detection results file created: 07/15/97 10:49:21a
Final results file created: 07/15/97 11:05:46a

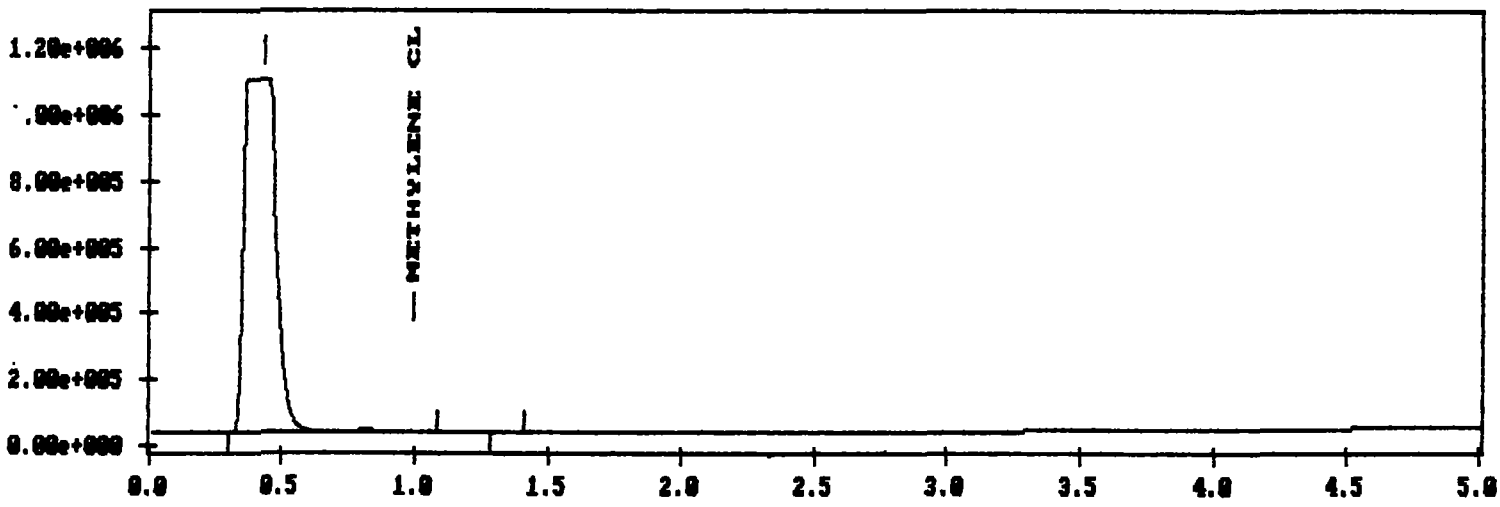
Name: DETECTION BY ECD
Comment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : A-6-10.5' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.990	METHYLENE CL	0.344424	2117.41210	494.061401

*** Concentration Report for << 7-15015A >>, Printed: 07/15/97 11:41:49a ***

Raw data file created: 07/15/97 11:39:24a Injected: 07/15/97 11:34:18a
Detection results file created: 07/15/97 11:41:09a
Final results file created: 07/15/97 11:41:43a

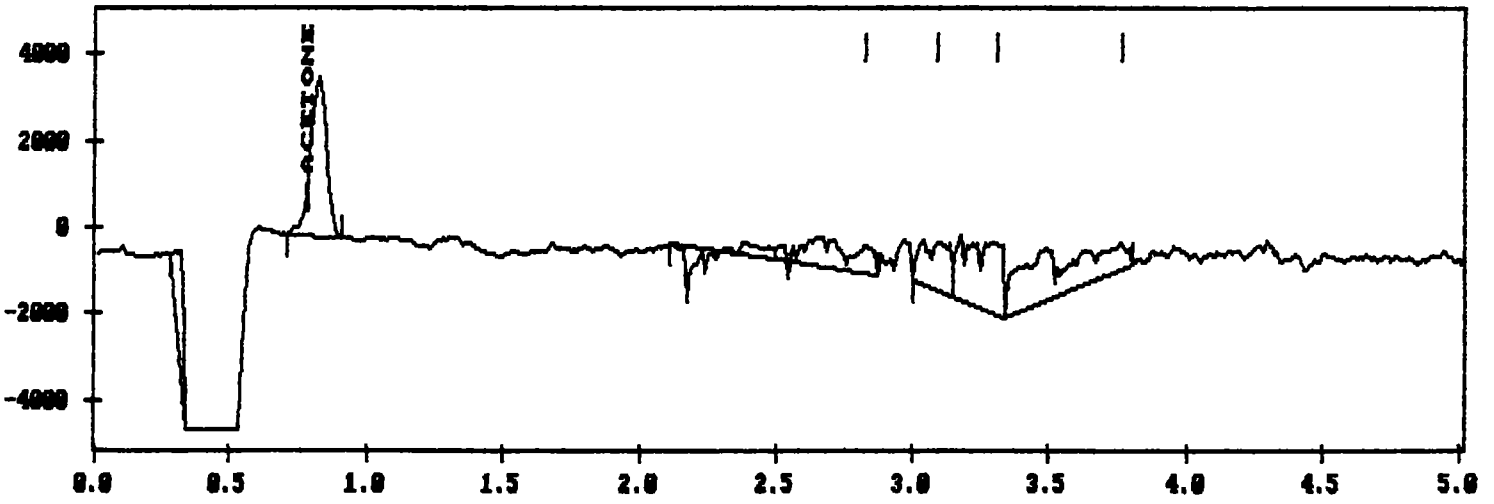
Name: DETECTION BY PID
mment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : A-7-12' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/15/97 8:34:39a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.790	ACETONE	45.352543	14929.6787	1608.20007
NF	CHLOROBENZENE	Not Found	Not Found	Not Found

*** Concentration Report for << 7-15016A >>, Printed: 07/15/97 11:40:40a ***

Raw data file created: 07/15/97 11:39:25a Injected: 02/05/206 10:28:16p
Detection results file created: 07/15/97 11:40:15a
Final results file created: 07/15/97 11:40:31a

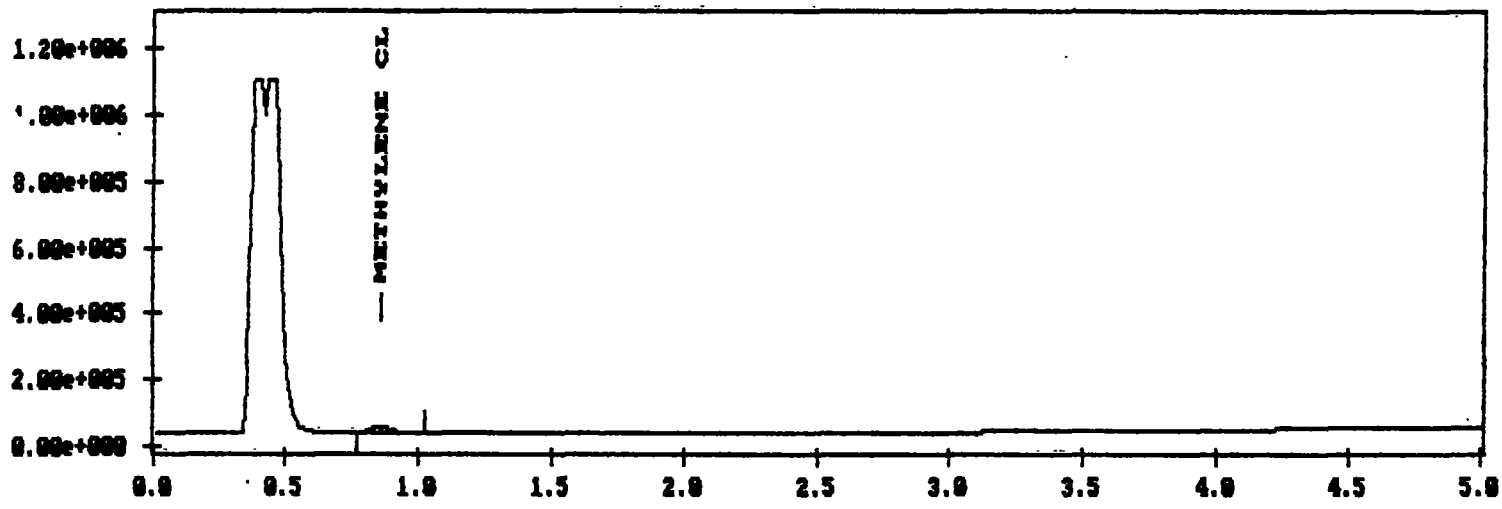
Name: DETECTION BY ECD
ament: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : A-7-12' H2O
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.855	METHYLENE CL	17.448168	107266.000	21315.3691

APPENDIX 5

SYSTEM CALIBRATION DATA

*** Concentration Report for << 7-15001A >>, Printed: 07/15/97 7:55:17a ***

Raw data file created: 07/15/97 7:52:19a Injected: 07/15/97 7:47:12a
Detection results file created: 07/15/97 7:55:04a
Final results file created: 07/15/97 7:55:06a

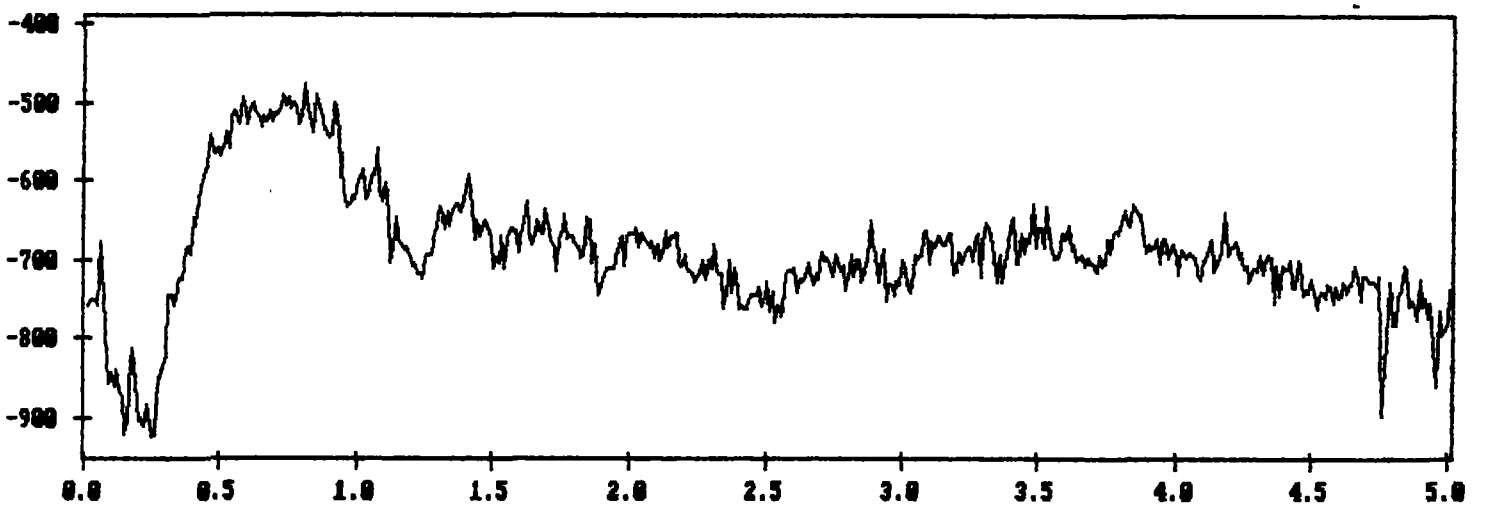
Name: DETECTION BY PID
ment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : system blank
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/14/97 10:59:37a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
NF	ACETONE	Not Found	Not Found	Not Found
NF	CHLOROBENZENE	Not Found	Not Found	Not Found

*** Concentration Report for << 7-15002A >>, Printed: 07/15/97 7:56:30a ***

Raw data file created: 07/15/97 7:52:19a Injected: 02/05/206 10:28:16p
Detection results file created: 07/15/97 7:56:22a
Final results file created: 07/15/97 7:56:23a

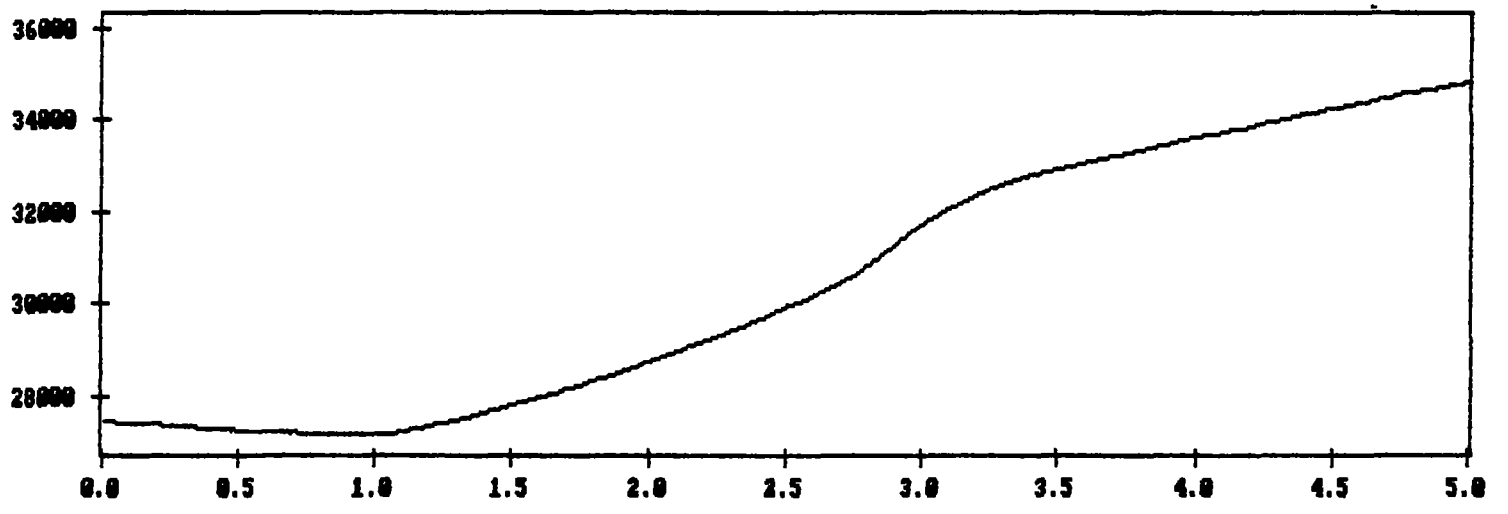
Name: DETECTION BY ECD
ment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : system blank
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
NF	METHYLENE CL	Not Found	Not Found	Not Found

*** Concentration Report for << 7-14001A >>, Printed: 07/14/97 11:22:43a ***

Raw data file created: 07/14/97 9:55:25a Injected: 07/14/97 9:50:18a
Detection results file created: 07/14/97 11:22:35a
Final results file created: 07/14/97 11:22:37a

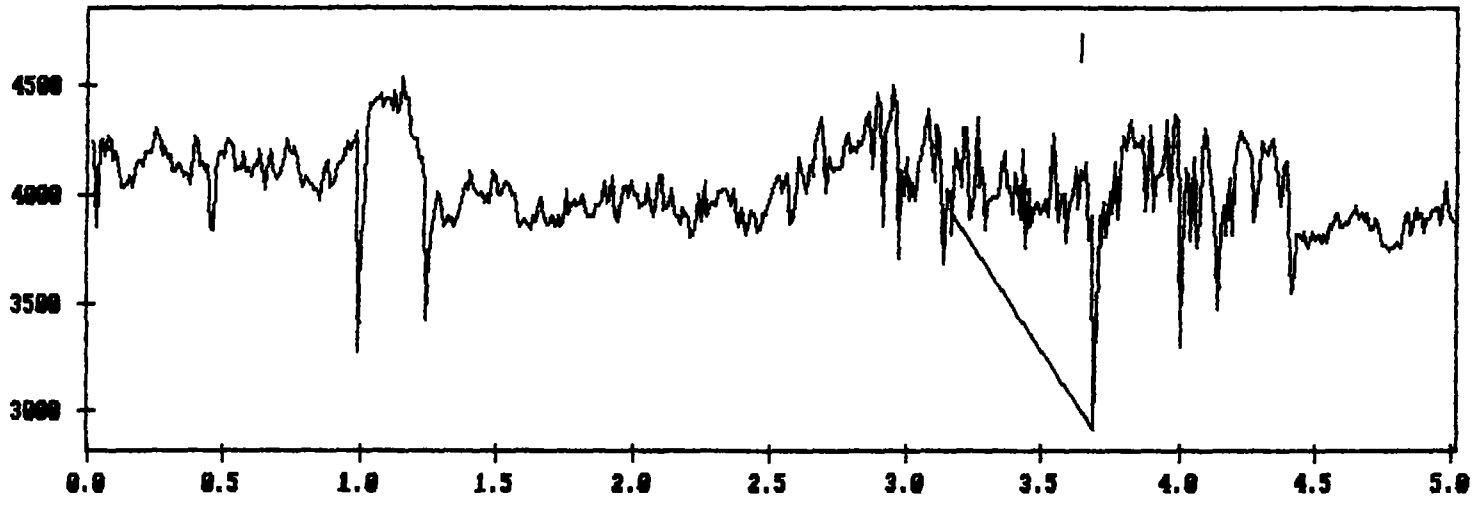
Name: DETECTION BY PID
mment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : system blank
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/14/97 10:59:37a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
NF	ACETONE	Not Found	Not Found	Not Found
NF	CHLOROBENZENE	Not Found	Not Found	Not Found

*** Concentration Report for << 7-14002A >>, Printed: 07/14/97 11:19:44a ***

Raw data file created: 07/14/97 9:55:25a Injected: 02/05/206 10:28:16p
Detection results file created: 07/14/97 11:19:36a
Final results file created: 07/14/97 11:19:38a

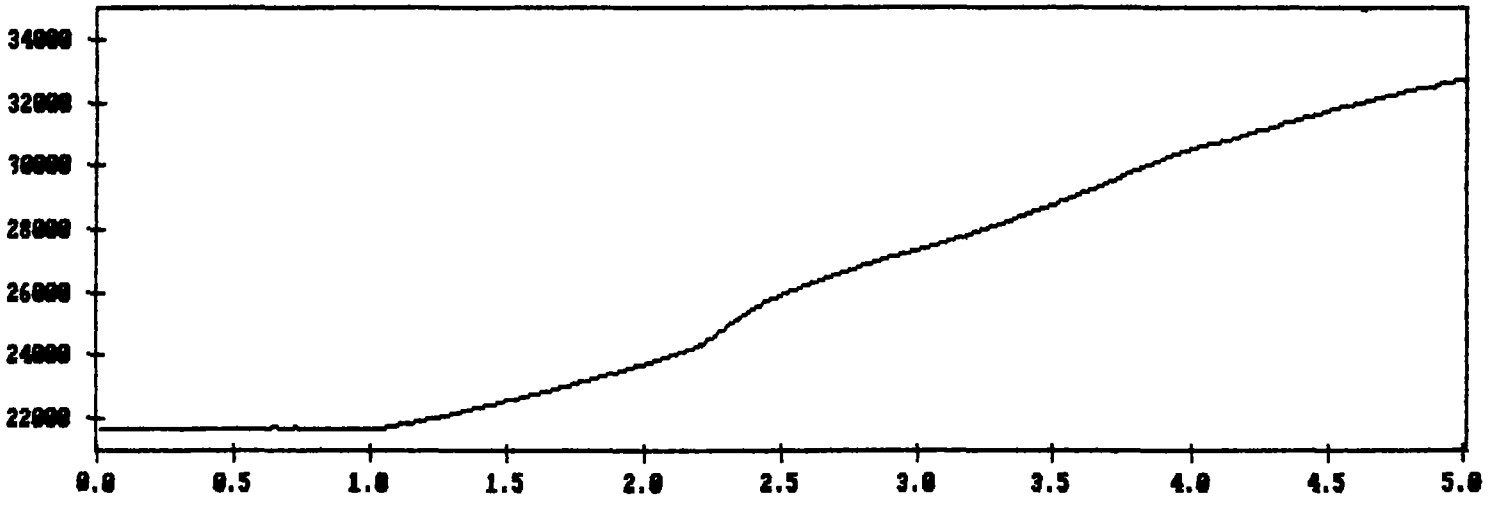
Name: DETECTION BY ECD
ment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : system blank
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
NF	METHYLENE CL	Not Found	Not Found	Not Found

*** Concentration Report for << 7-10003A >>, Printed: 07/14/97 11:24:04a ***

Raw data file created: 07/11/97 2:42:01p Injected: 07/11/97 2:31:55p
Detection results file created: 07/14/97 11:23:55a
Final results file created: 07/14/97 11:23:57a

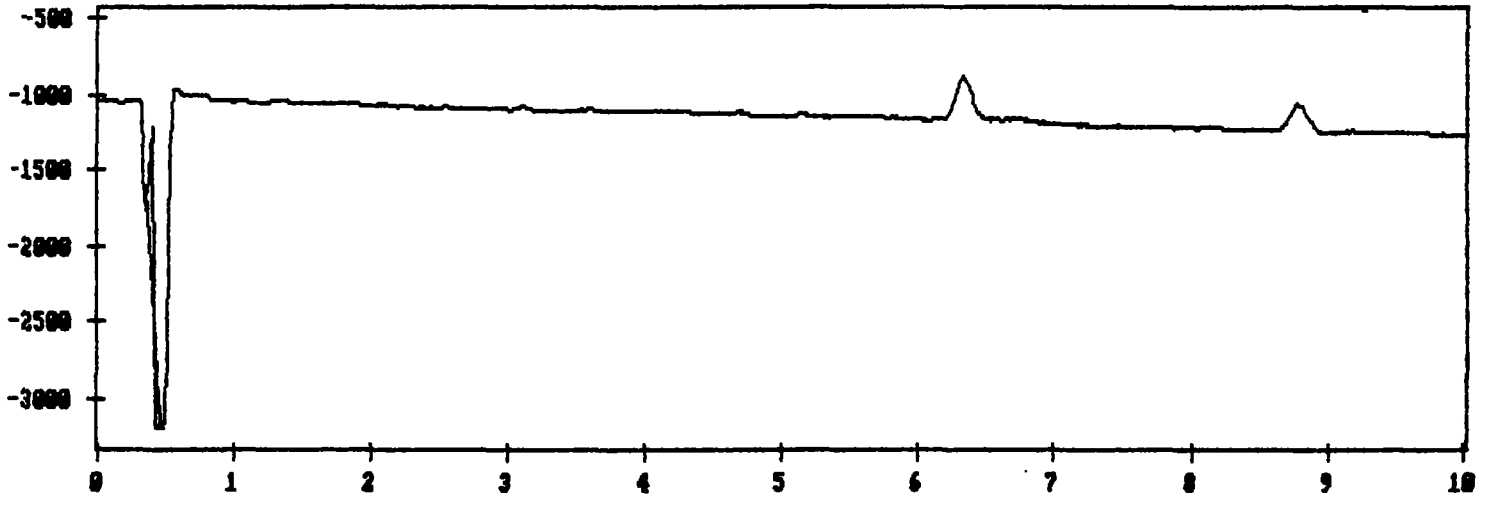
Name: DETECTION BY PID
ment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : REAGENT BLANK
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/14/97 10:59:37a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
NF	ACETONE	Not Found	Not Found	Not Found
NF	CHLOROBENZENE	Not Found	Not Found	Not Found

*** Concentration Report for << 7-10004A >>, Printed: 07/14/97 11:24:37a ***

Raw data file created: 07/11/97 2:42:01p Injected: 02/05/206 10:28:16p
Detection results file created: 07/14/97 11:24:29a
Final results file created: 07/14/97 11:24:30a

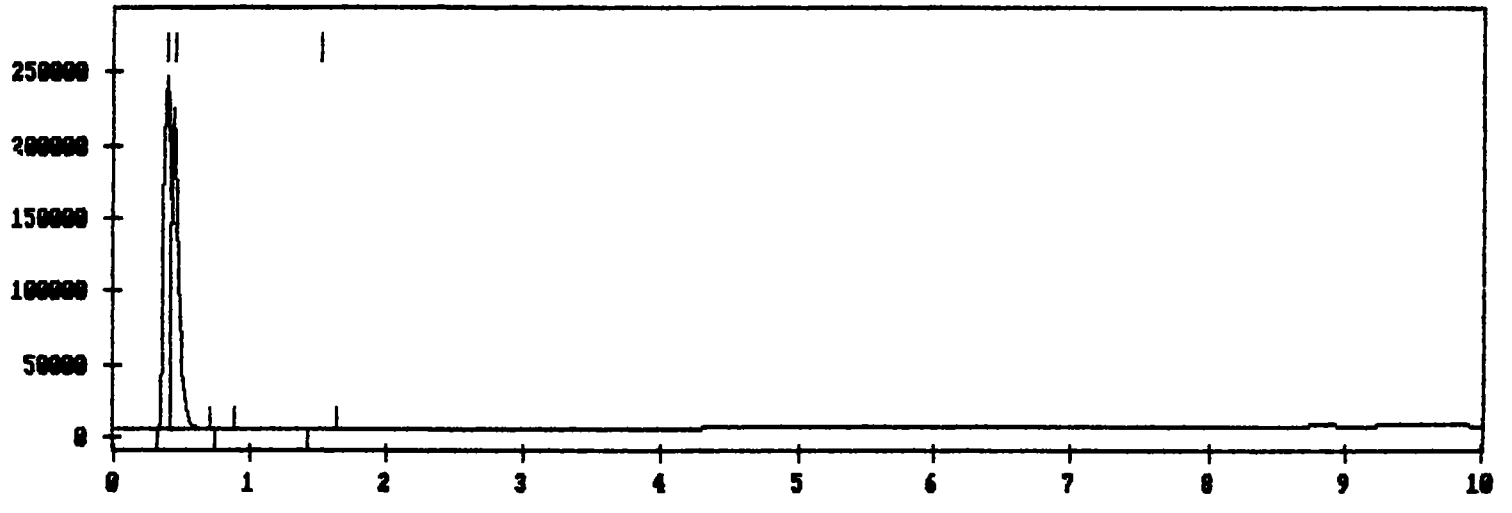
Name: DETECTION BY ECD
ment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : REAGENT BLANK
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
NF	METHYLENE CL	Not Found	Not Found	Not Found

----- Acquisition Method Report -----
07/14/97 11:12:00a

<< LAYN-SOL >>
Created: 07/11/97 1:58:51p
Last modified: 07/13/97 12:04:09p

Name: solvents for layne-verona mo
Comment: ACETONE, DICHLOROMETHANE, CHLOROBENZENE

Acquisition rate: 0.60 sec/pt
Runtime: 5.00 min

Channel A detector range: 1.00 volt(s)
Channel B detector range: 1.00 volt(s)

Use sample table: No
Set monitor range: No
Process raw data at upload: No

Time (min)	Event Type	Relay
0.00	Off	1

----- Integration Section Report -----
07/14/97 11:12:01a

<< LAYN-PHH >>
Created: 07/13/97 12:47:37p
Last modified: 07/13/97 12:48:54p

Name: DETECTION BY PID
Comment: ACETONE AND CHLOROBENZENE

Peak width: 5.0000 sec
Slope threshold: 50.0000 uV / sec
Area threshold: 5000.00 uV sec

Time (min)	Event Type	Value
0.00	PD	ON

------ Component Section Report ------
07/14/97 11:12:01a

<< LAYN-PHH >>

Created: 07/13/97 12:47:38p
Last modified: 07/14/97 10:59:37a

Name: DETECTION BY PID
Comment: ACETONE AND CHLOROBENZENE

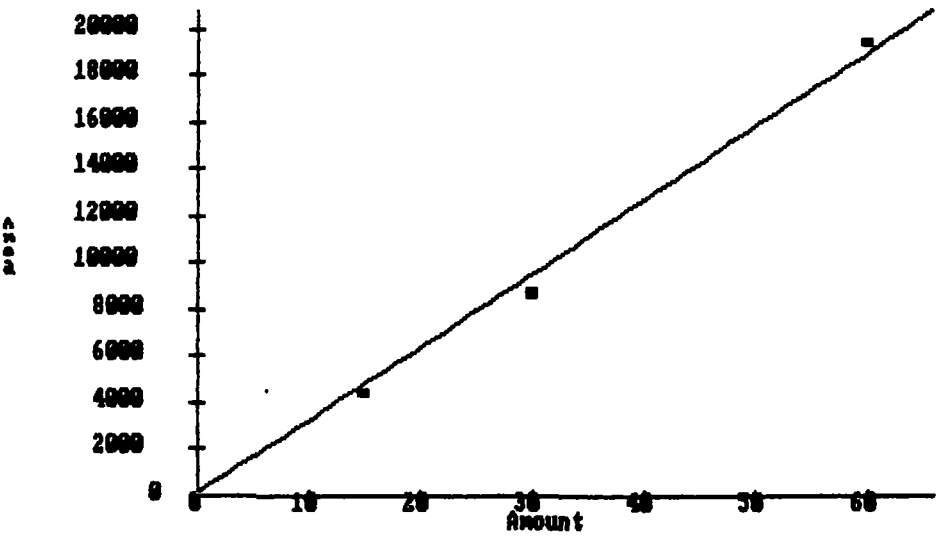
Expected IS amount: 0.000000

---------- ACETONE ----------

Expected retention time (min): 0.730

Absolute search window (min): 0.000
Relative search window (%) : 10.00

Level	Amount	Area	Area/Amount	Used?
1	15.000000	4304.197754	286.946503	Yes
2	30.000000	8581.037109	286.034576	Yes
3	60.000000	19229.152344	320.485870	Yes



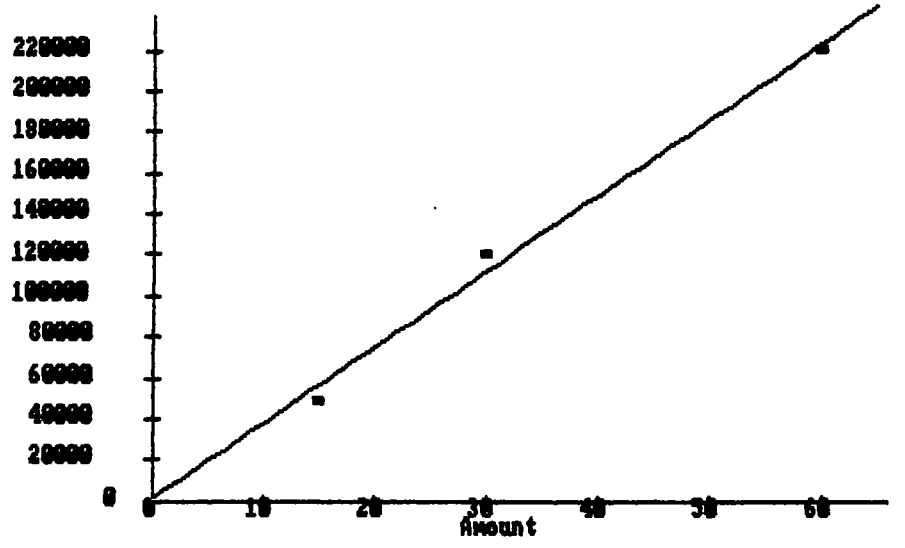
Calibration equation: 312.326599x
Curve type: Linear forced through origin
Weighting: Equal
Correlation coefficient: 0.955397

---------- CHLOROBENZENE ----------

Expected retention time (min): 4.327

Absolute search window (min): 0.000
Relative search window (%) : 10.00

Level	Amount	Area	Area/Amount	Used?
1	15.000000	48174.171875	3211.611572	Yes
2	30.000000	118996.22656	3966.540771	Yes
3	60.000000	219169.56250	3652.825928	Yes



Calibration equation: 3691.571045x
Curve type: Linear forced through origin
Weighting: Equal
Correlation coefficient: 0.957793

*** Report Section for << LAYN-PHH >>, Printed: 07/14/97 11:12:12a ***

Created: 07/13/97 12:47:37p
Last modified: 07/13/97 12:49:18p

Print header fields: Yes

Creation times: Yes
ID name: Yes
Processing method header comment: Yes
Instrumentation comment: No
Processing method comment: No
Interface information: No
Acquisition method name: Yes
Sample table name: No
Sample name: Yes
Sample parameters: Yes
IS amount (Calib): No
Adjusted amount multiplier: No
Default response factor: No
Processing method information: Yes
Peak numbers: No

Print chromatogram: Yes

Number of plots: 1
Chromatogram orientation: Portrait
Chromatogram height (cm): 8.0
Print superior peak labels: Component Name
Print inferior peak labels: None
Superior label position: Upper boundary
Print chromatogram baseline: Yes
Print baseline detection marks: Yes
Print search windows: No
Print integration events: No
Print table for each plot: No
Default Floor: Minimum point
Plot boundaries: Default

Print peak group tables: No
Print full results table: Yes

Print unknown peaks: No
Print unmatched components: Yes
Align fields along decimal: No
Use default response peak: No
Default response type: Area
Adjusted amount multiplier: 1.000000
Default response factor: 0.000000

Print totals from tables: No

For Peak Groups, Calculate % and Norms Using: All Peaks
For Plot Windows, Calculate % and Norms Using: All Peaks
Form feed after header: No
Form feed after chromatogram: No
Form feed after report: Yes
Print over perforation: No

Report Columns

: Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)

*** Concentration Report for << 7-14013A >>, Printed: 07/14/97 11:12:13a ***

Raw data file created: 07/14/97 11:05:55a Injected: 07/14/97 11:00:48a
Detection results file created: 07/14/97 11:06:18a
Final results file created: 07/14/97 11:10:51a

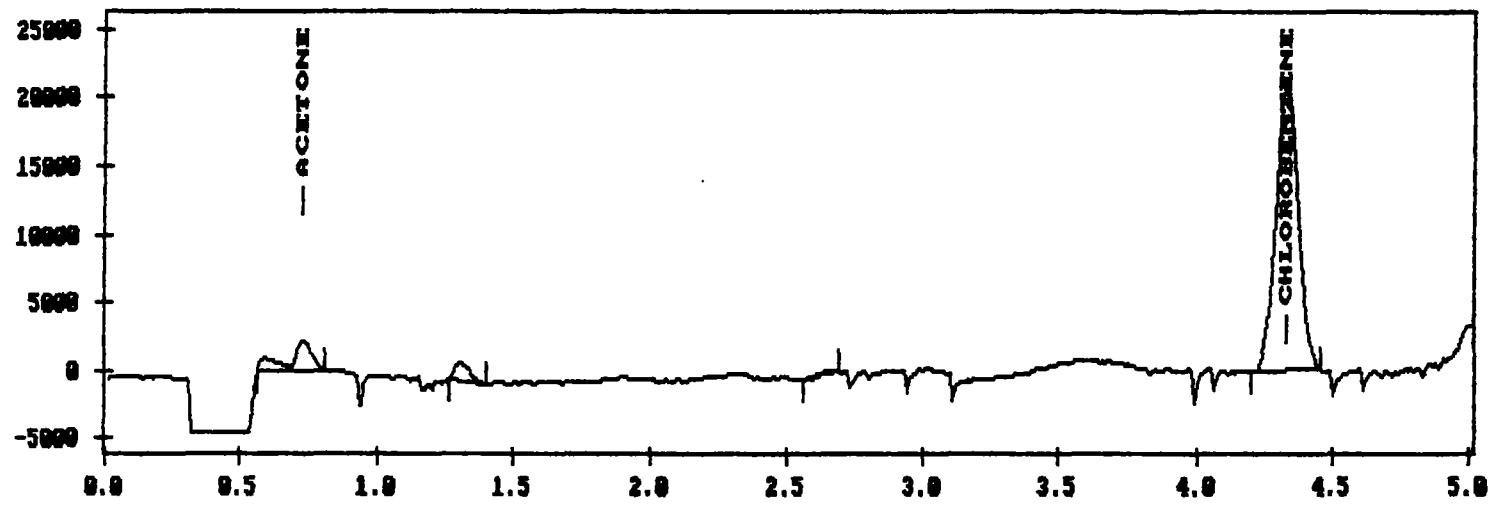
Name: DETECTION BY PID
mment: ACETONE AND CHLOROBENZENE

Acquisition method: LAYN-SOL

Sample name : calibration 30 ppb
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-PHH
Integration section: created 07/13/97 12:47:37p, modified 07/13/97 12:48:54p
Calibration section: created 07/13/97 12:47:38p, modified 07/14/97 10:59:37a
Reporting section : created 07/13/97 12:47:37p, modified 07/13/97 12:49:18p
Chromatogram baseline is manually edited

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.730	ACETONE	30.000000	8581.03710	2144.66796
4.327	CHLOROBENZENE	30.000000	118996.226	21116.8496

----- Acquisition Method Report -----
07/14/97 11:18:46a

<< LAYN-SOL >>
Created: 07/11/97 1:58:51p
Last modified: 07/13/97 12:04:09p

Name: solvents for layne-verona mo
Comment: ACETONE, DICHLOROMETHANE, CHLOROBENZENE

Acquisition rate: 0.60 sec/pt
Runtime: 5.00 min

Channel A detector range: 1.00 volt(s)
Channel B detector range: 1.00 volt(s)

Use sample table: No
Set monitor range: No
Process raw data at upload: No

Time (min)	Event Type	Relay
0.00	Off	1

----- Integration Section Report -----
07/14/97 11:18:47a

<< LAYN-EHH >>
Created: 07/13/97 12:58:45p
Last modified: 07/13/97 12:59:32p

Name: DETECTION BY ECD
Comment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Peak width: 5.0000 sec
Slope threshold: 50.0000 uV / sec
Area threshold: 5000.00 uV sec

Time (min)	Event Type	Value
0.00	PD	ON

------ Component Section Report ------
07/14/97 11:18:47a

<< LAYN-EHH >>

Created: 07/13/97 12:58:46p
Last modified: 07/14/97 11:17:02a

Name: DETECTION BY ECD
Comment: METHYLENE CHLORIDE (DICHLOROMETHANE)

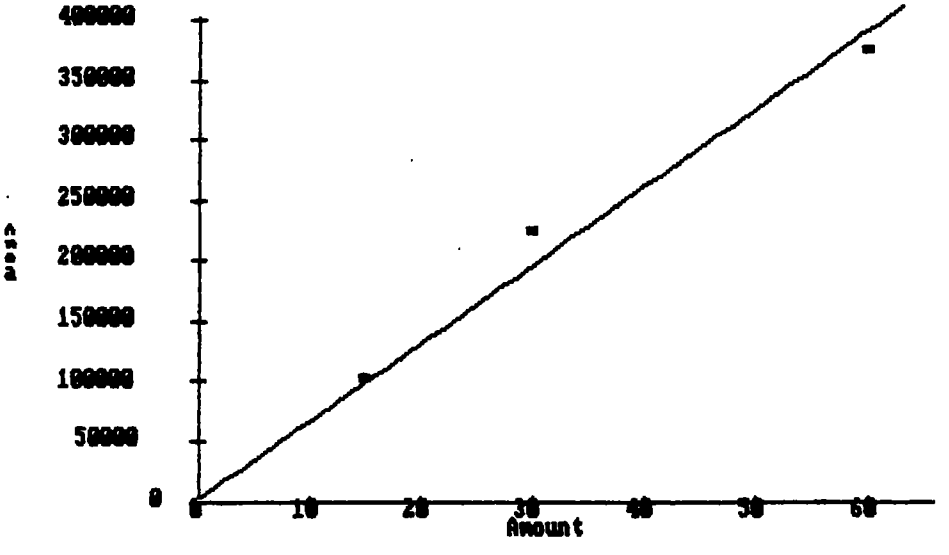
Expected IS amount: 0.000000

---------- METHYLENE CL ----------

Expected retention time (min): 0.881

Absolute search window (min): 0.000
Relative search window (%) : 10.00

Level	Amount	Area	Area/Amount	Used?
1	15.000000	100466.89843	6697.793457	Yes
2	30.000000	222034.78125	7401.159180	Yes
3	60.000000	372769.81250	6212.830078	Yes



Calibration equation: 6462.271973x
Curve type: Linear forced through origin
Weighting: Equal
Correlation coefficient: 0.932787

*** Report Section for << LAYN-EHH >>, Printed: 07/14/97 11:18:53a ***

Created: 07/13/97 12:58:45p
Last modified: 07/13/97 12:59:46p

Print header fields: Yes

Creation times: Yes
ID name: Yes
Processing method header comment: Yes
Instrumentation comment: No
Processing method comment: No
Interface information: No
Acquisition method name: Yes
Sample table name: No
Sample name: Yes
Sample parameters: Yes
IS amount (Calib): No
Adjusted amount multiplier: No
Default response factor: No
Processing method information: Yes
Peak numbers: No

Print chromatogram: Yes

Number of plots: 1
Chromatogram orientation: Portrait
Chromatogram height (cm): 8.0
Print superior peak labels: Component Name
Print inferior peak labels: None
Superior label position: Upper boundary
Print chromatogram baseline: Yes
Print baseline detection marks: Yes
Print search windows: No
Print integration events: No
Print table for each plot: No
Default Floor: Minimum point
Plot boundaries: Default

Print peak group tables: No
Print full results table: Yes

Print unknown peaks: No
Print unmatched components: Yes
Align fields along decimal: No
Use default response peak: No
Default response type: Area
Adjusted amount multiplier: 1.000000
Default response factor: 0.000000

Print totals from tables: No

For Peak Groups, Calculate % and Norms Using: All Peaks
For Plot Windows, Calculate % and Norms Using: All Peaks
Form feed after header: No
Form feed after chromatogram: No
Form feed after report: Yes
Print over perforation: No

Report Columns

: Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)

*** Concentration Report for << 7-14012A >>, Printed: 07/14/97 11:18:54a ***

Raw data file created: 07/14/97 10:58:10a Injected: 02/05/206 10:28:16p
Detection results file created: 07/14/97 11:18:18a
Final results file created: 07/14/97 11:18:25a

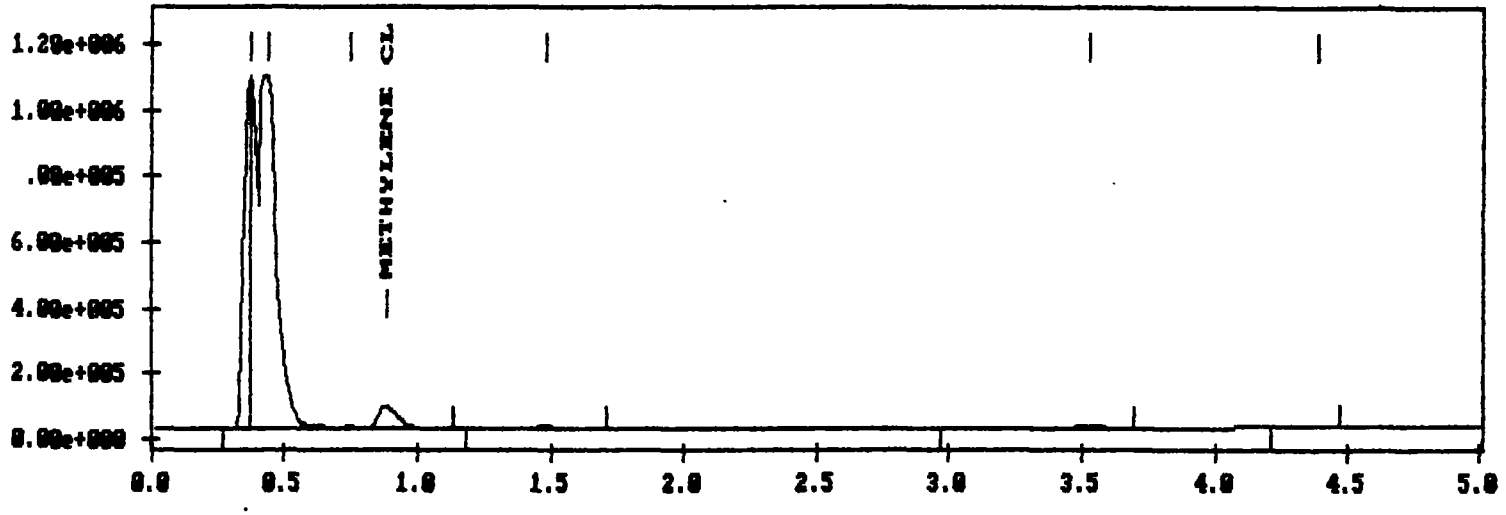
Name: DETECTION BY ECD
ment: METHYLENE CHLORIDE (DICHLOROMETHANE)

Acquisition method: LAYN-SOL

Sample name : calibration 60 ppb
Vial ID :
Injection volume : 1.000000
IS amount (Sample): 0.000000
Sample amount : 1.000000
Dilution factor : 1.000000

Processing method : LAYN-EHH
Integration section: created 07/13/97 12:58:45p, modified 07/13/97 12:59:32p
Calibration section: created 07/13/97 12:58:46p, modified 07/14/97 11:17:02a
Reporting section : created 07/13/97 12:58:45p, modified 07/13/97 12:59:46p

Superior peak labels: Component Name



FULL REPORT

Ret Time (Min)	Component Name	Concentr. PPB	Area (uV*Sec)	Height (uV)
0.881	METHYLENE CL	60.000000	372769.812	69031.2187

------ Update Standards Report ------
07/15/97 8:39:24a

Final Results file name : 7-15003A, created 07/15/97 8:39:06a
Calibration section name: LAYN-PHH, last modified 07/15/97 8:34:39a

Number of components entered : 2
Number of components found : 2
Number of unidentified peaks : 2
Number of components not found: 0

Type of level update: Replace

Type of Retention time update: Replace

Level Updated: 2

PEAKS FOUND

Component Name	Expected Time	Actual Time	Amount	Peak Response	Area or Height	Response/ Amount	Calibration Equation
ACETONE	0.732	0.760	30.000000	11237.282227	Area	374.576080	329.191650x
CHLOROBENZENE	4.334	4.359	30.000000	66302.679688	Area	2210.089355	2676.802979x

PEAKS UNKNOWN

Component Name	Expected Time	Actual Time	Amount	Peak Response	Area or Height	Response/ Amount	Calibration Equation
		0.289		17094.376953	Area	Undefined	
		1.332		5552.364746	Area	Undefined	

------ Update Standards Report ------
07/15/97 8:31:23a

Final Results file name : 7-15004A, created 07/15/97 8:31:05a
libration section name: LAYN-EHH, last modified 07/14/97 11:17:02a

Number of components entered : 1
Number of components found : 1
Number of unidentified peaks : 2
Number of components not found: 0

Type of level update: Replace

Type of Retention time update: Replace

Level Updated: 2

PEAKS FOUND

Component Name	Expected Time	Actual Time	Amount	Peak Response	Area or Height	Response/ Amount	Calibration Equation
METHYLENE CL	0.907	0.907	30.000000	172488.81250	Area	5749.626953	6147.694336x

PEAKS UNKNOWN

Component Name	Expected Time	Actual Time	Amount	Peak Response	Area or Height	Response/ Amount	Calibration Equation
		0.771		7986654.5000	Area	Undefined	
		1.503		38824.265625	Area	Undefined	

Attachment B

GEOPROBE SURVEY REPORT - VERONA, MISSOURI FACILITY

PLAINS ENVIRONMENTAL SERVICE (PES)

July 17, 1997

Laboratory Report

P·E·S

Plains Environmental Services
P.O. Box 6288 • Salina, KS 67401-0288 • (913) 827-4545
Environmental Consulting & Mobile Laboratory Services

Client: Layne Western
1011 W. Harry St
Wichita, KS 67213

Date Reported: 7/25/97
Project Location:
Syntex DuCoa Plant
Verona, MO

Attn: Steve Mitchell

Project # 8300-6.1

Sample Detection Limit	Date Analyzed	Depth (feet)	DCM 1. ug/L	Acetone 5. ug/L	Chlorobenzene 1. ug/L
A7 (12)	7/17/97	12	ND	ND	ND
A7 (17.5)	7/17/97	17.5	ND	ND	ND
A2 (12)	7/17/97	12	ND	ND	ND
A2 (23)	7/17/97	23	ND	ND	ND
A3 (13)	7/17/97	13	1.	ND	ND
A3 (29)	7/17/97	29	3.	ND	ND
A4 (12)	7/17/97	12	ND	ND	ND
A4 (21)	7/17/97	21	4.	ND	ND
A6 (18)	7/17/97	18	2.	ND	ND
B3 (16)	7/17/97	16	ND	ND	ND
B2 (12)	7/17/97	12	ND	ND	ND
B2 (23)	7/17/97	23	5.	ND	ND
B2 (23) DUP	7/17/97	23	6.	ND	ND
C1 (12)	7/17/97	12	ND	ND	ND
C1 (36)	7/17/97	36	1.	ND	2.
B4 (36)	7/17/97	36	3.	ND	5.
A8 (12)	7/17/97	12	ND	ND	ND
A8 (36)	7/17/97	36	19.	ND	ND
B5 (12)	7/17/97	12	ND	ND	ND
B5 (41)	7/17/97	41	1.	ND	6.
C2 (20)	7/17/97	20	3.	ND	ND

Abbreviations:
ug/L = micrograms per Liter
ND = not detected
DUP = duplicate

DCM = Dichloromethane

Laboratory Report

All results represent water samples that were analyzed using a heated headspace analysis. A 40-mL VOC vial was filled one-half full. The sample vial was capped tightly and heated at 80 C for 30 minutes. This technique drives the volatile components from the sample into the headspace. A 1.0 cc sample of headspace was injected into the gas chromatograph for analysis. No correction was made on the reported results to account for any volatile compounds that may have remained in the sample.

All analyses were performed on-site by Plains Environmental Services using GC/FID.

PLAINS ENVIRONMENTAL SERVICES

Lynn R. Newcomer
President

rwb

Plains Environmental Services
FIELD LOG SHEET

Site Location: DuCoa, Veron, MO
Client: ~~Chaterra & Associates~~ Lane Western
Project Number: 8300-6.1

Sampler: JK
Analyst: RB
Date: 7/17/97

Sample ID	Time	Depth (ft)	PES ID	Matrix	Comments
STD	824	—	ver 01	—	BTEX 1.0cc
STD	845	—	ver 02	—	BTEX 1.0cc
STD	908	—	ver 03	—	CH_2Cl_2 1.0cc
STD	914	—	ver 04	—	CH_2Cl_2 1.0cc
STD	918	—	ver 05	—	CH_2Cl_2 1.0cc
STD	922	—	ver 06	—	acetone 1.0cc
STD	930	—	ver 07	—	acetone 1.0cc
STD	940	—	ver 08	—	acetone 1.0cc
STD	~~1028~~	—	ver 09	—	BTEX 1.0cc
STD	1028	—	ver 10	—	BTEX 1.0cc RAMP
STD	1053	—	ver 11	—	BTEX 1.0cc RAMP
A7 (R')	1203	R'	ver 12	H_2O	1.0cc
A7 (17½')	1230	17.5'	ver 13	H_2O	1.0cc
STD	1314	—	ver 14	—	acetone 1.0cc
A2 (R')	1341	12'	ver 15	H_2O	1.0cc
A2 (23')	1413	23'	ver 16	H_2O	1.0cc
STD ~~A3 (R')~~	~~1540~~	~~R'~~	ver 17	—	CH_2Cl_2
A3(13)	1540	13'	ver 18	H_2O	1.0cc
A3(29)	1616	29'	ver 19	H_2O	1.0cc
A4(R)	1637	12'	ver 20	H_2O	1.0cc
A4(21)	1701	21'	ver 21	H_2O	1.0cc
STD	1722	—	ver 22	—	acetone 10cc
A6(18)	1745	18'	ver 23	H_2O	1.0cc
~~B~~3(16)	1804	16'	ver 24	H_2O	1.0cc

Plains Environmental Services
FIELD SHEET

Site Location: DuCoa Verona, MO
Client: Lane Western
Project Number: 8300-6.1

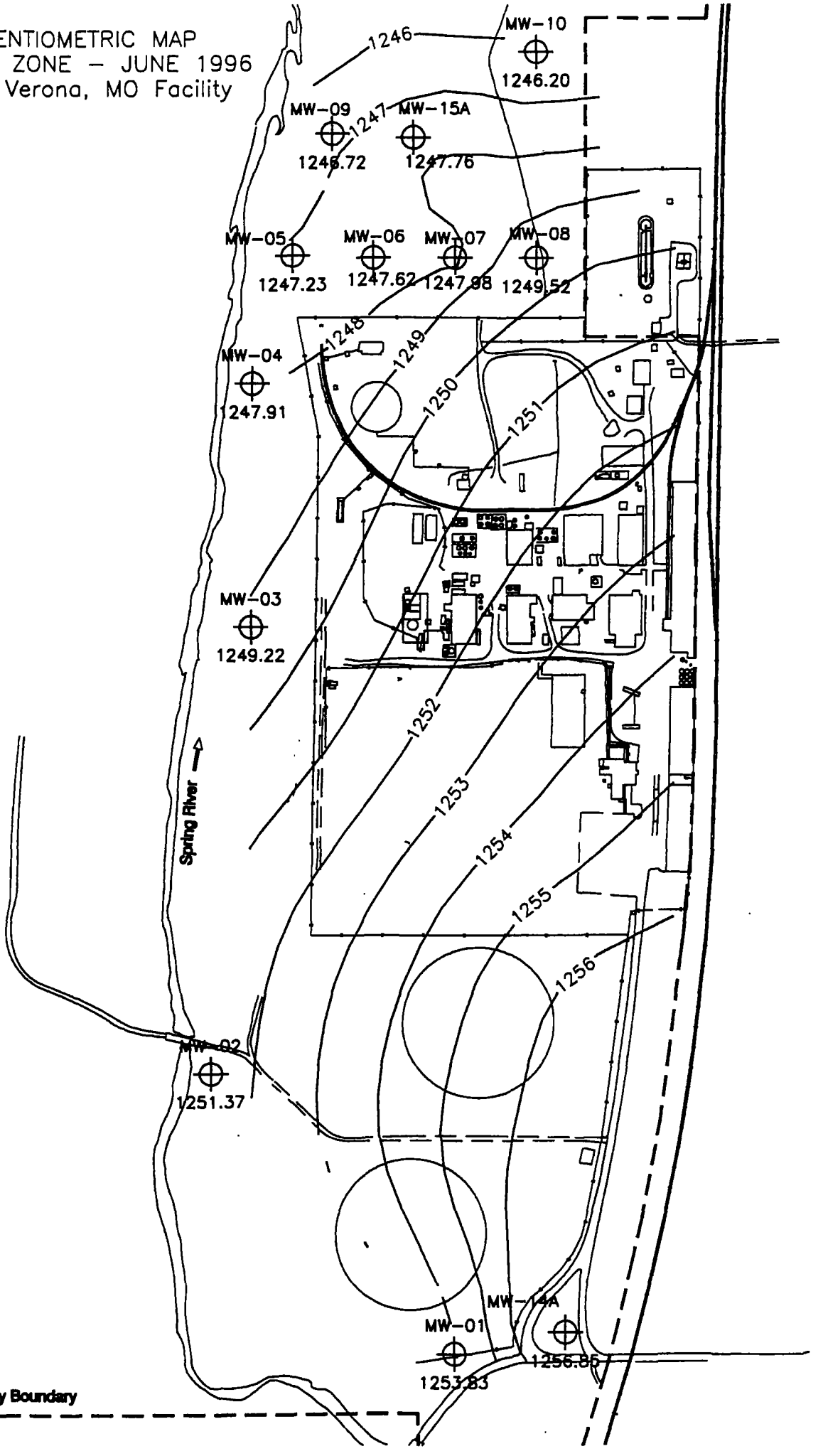
Sampler: Jesse
Analyst: Rodney
Date: 7/17/97

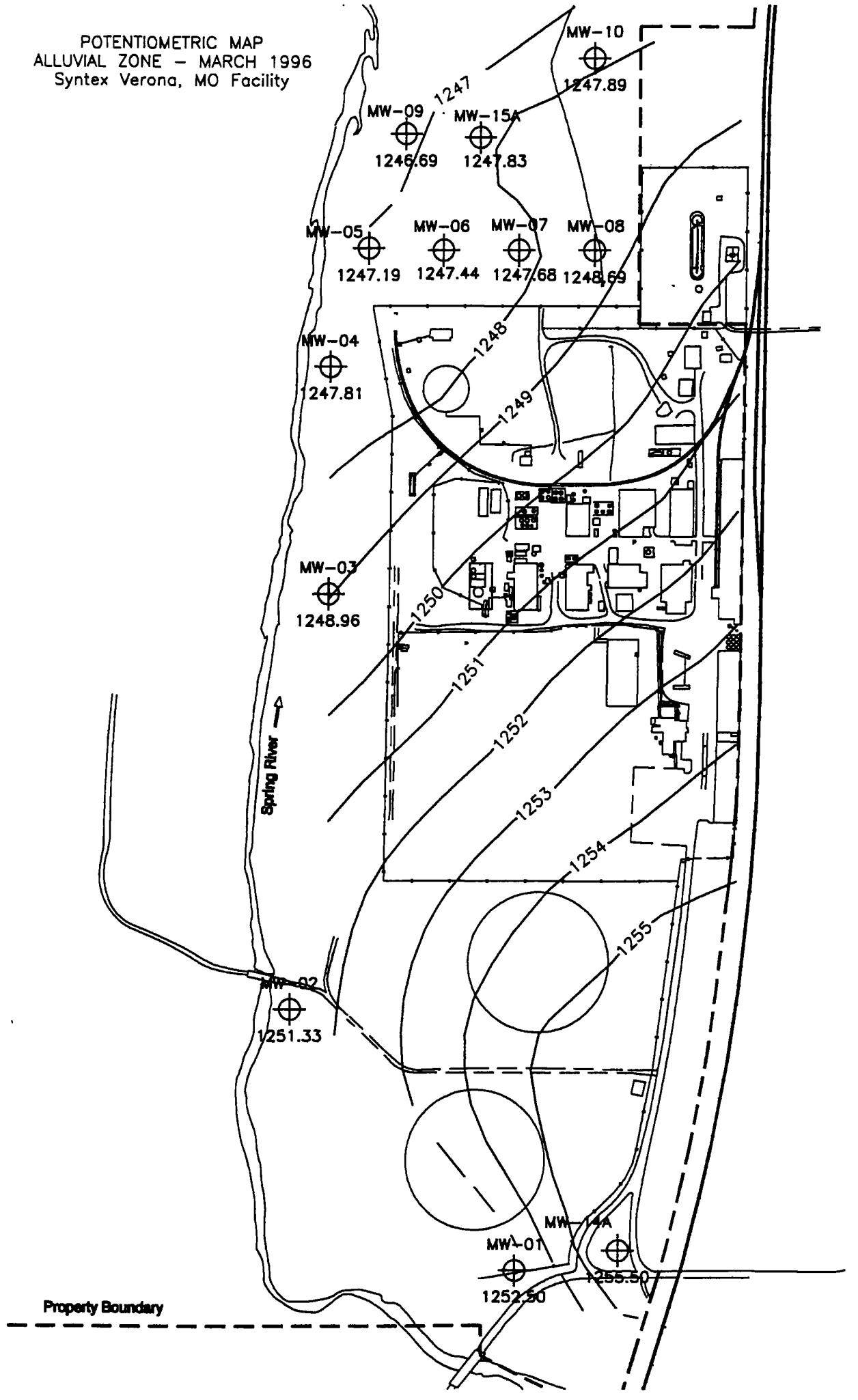
Sample ID	Time	Depth (ft)	PES ID	Matrix	Comments
B2(12)	1828	12'	ver 25	H_2O	1.0cc
B2(23)	1901	23'	ver 26	H_2O	1.0cc
STD	1921	—	ver 27	—	DCM 1.0cc
STD	1925	—	ver 28	—	DCM 1.0cc
B2(23)DUP	1929	23'	ver 29	H_2O	1.0 cc
C1(12)	1942	12'	ver 30	H_2O	1.0cc
C1(36)	2005	36'	ver 31	H_2O	1.0cc
B4(36)	2028	36'	ver 32	H_2O	1.0cc
A8(12)	2051	12'	ver 33	H_2O	1.0 cc
A8(36)	2108	36'	ver 34	H_2O	1.0 cc
B5(12)	2138	12'	ver 35	H_2O	1.0cc
B5(41)	2201	41'	ver 36	H_2O	1.0cc
C2(20)	2245	20'	ver 37	H_2O	1.0cc
Blank	2320	—	ver 38	—	1.0cc

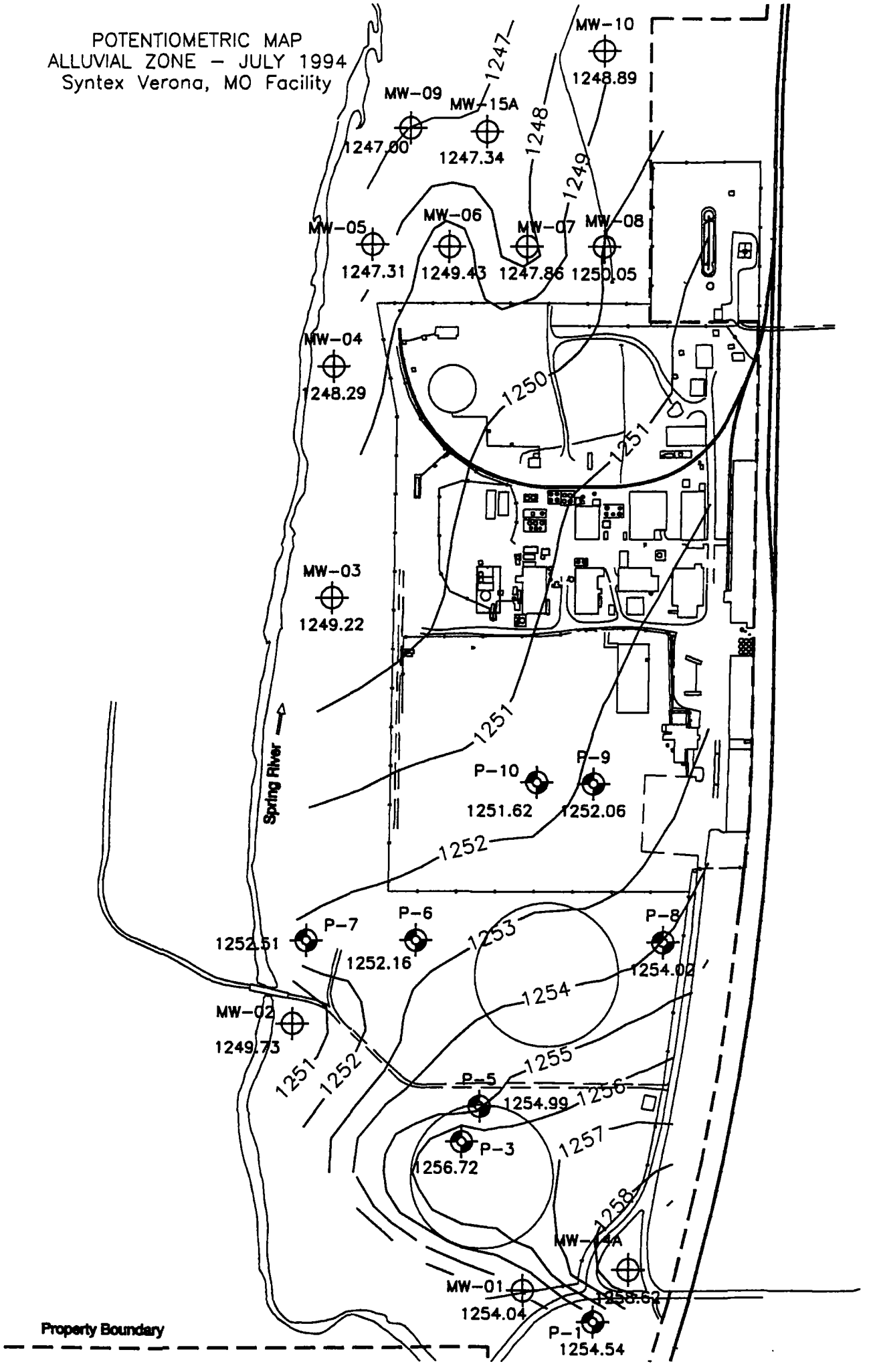
Attachment C

GROUNDWATER POTENTIOMETRIC SURFACE MAPS
DUCOA (FORMERLY SYNTEX/DUCOA) VERONA, MO FACILITY

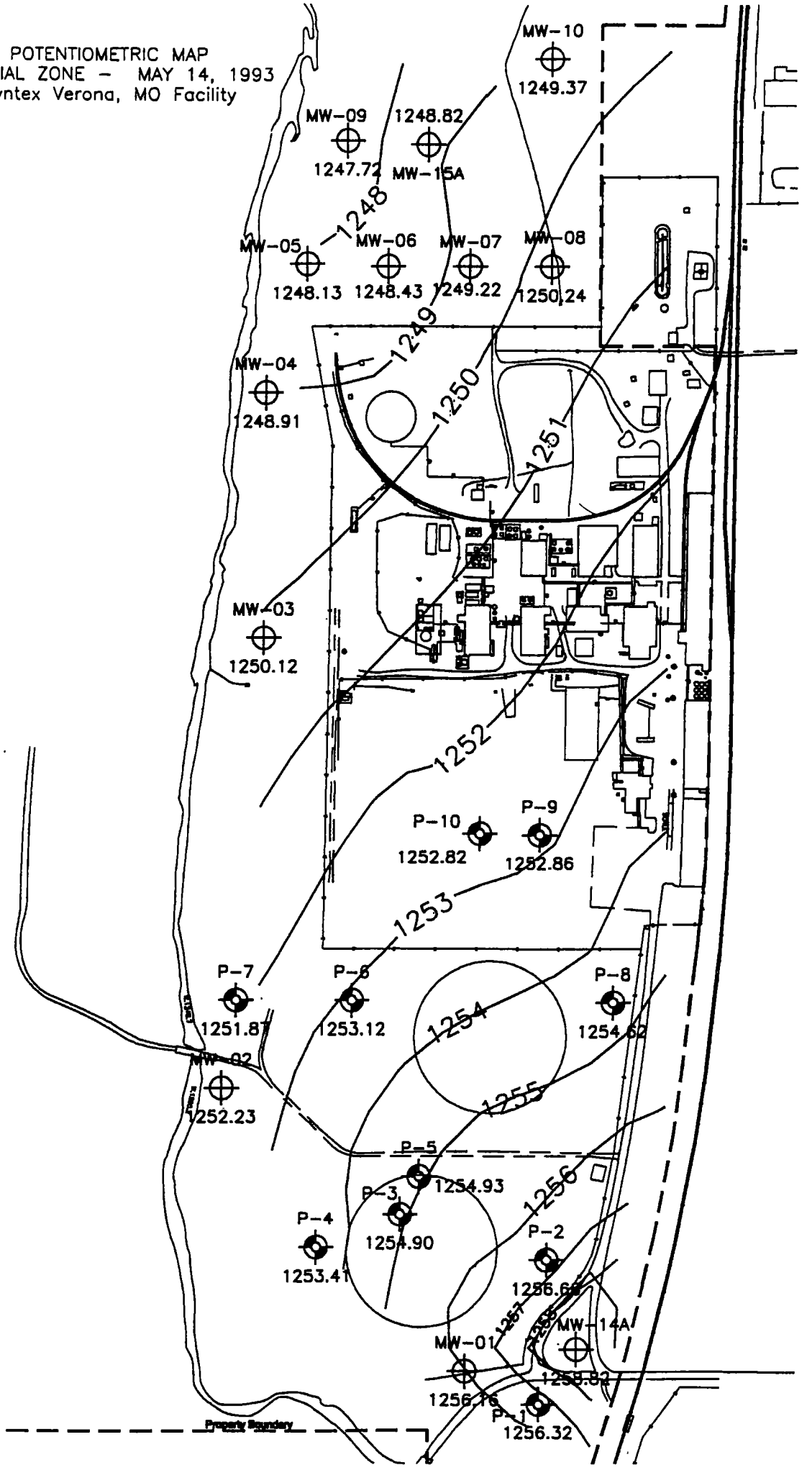
POTENTIOMETRIC MAP
ALLUVIAL ZONE – JUNE 1996
Syntex Verona, MO Facility




POTENTIOMETRIC MAP
ALLUVIAL ZONE – MARCH 1996
Syntex Verona, MO Facility
MW-10
1247.89
MW-09
1246.69
MW-15A
1247.83
1247
MW-05
1247.19
MW-06
1247.44
MW-07
1247.68
MW-08
1248.69
MW-04
1247.81
1248
1249
MW-03
1248.96
1250
1251
1252
1253
1254
1255
Spring River
MW-02
1251.33
MW-14A
1255.50
MW-01
1252.50
Property Boundary


POTENTIOMETRIC MAP
ALLUVIAL ZONE – JULY 1994
Syntex Verona, MO Facility
MW-10
1248.89
MW-09
1247.00
MW-15A
1247.34
1247
1248
1249
MW-05
1247.31
MW-06
1249.43
MW-07
1247.86
MW-08
1250.05
MW-04
1248.29
1250
1251
MW-03
1249.22
Spring River
1251
P-10
1251.62
P-9
1252.06
1252
P-7
1252.51
P-6
1252.16
1253
P-8
1254.02
1254
MW-02
1249.73
1251
1252
1255
P-5
1254.99
1256
P-3
1256.72
1257
1258
MW-14A
MW-01
1254.04
1258.62
P-1
1254.54
Property Boundary

POTENTIOMETRIC MAP
ALLUVIAL ZONE – MAY 14, 1993
Syntex Verona, MO Facility



Attachment D

LABORATORY ANALYTICAL DATA SHEETS
DUPLICATE GROUNDWATER SAMPLES
SELECTED GEOPROBE LOCATIONS
DUCOA (FORMERLY SYNTEX/DUCOA) VERONA, MO FACILITY

SOUTHWEST LABORATORY
OF OKLAHOMA, INC.

July 30, 1997

Mr. Scott Barton
SYNTEX AGRIBUSINESS, INC.
Environmental Projects Department
2460 West Bennett
Post Office Box 1246
Springfield, MO 65801

Project: **VERONA**
SWLO ID: 30208.01 - 30208.05

Dear Mr. Barton:

Enclosed are the analytical results and diskette deliverable for your sample received in our laboratory on July 22, 1997, for the above captioned project.

If, in your review, you should have any questions or require additional information, do not hesitate to call.

Sincerely,

Robert Harris
Laboratory Director

RH/jt

Enclosures

1700 WEST ALBANY • BROKEN ARROW, OK 74012-1421 • OFFICE (918) 251-2858 • FAX (918) 251-2599

CHAIN OF CUSTODY RECORD

Syntex Agribusiness, Inc.
2460 W. Bennett Springfield, Missouri 65807
(417) 866-7291

Litigation Related Samples - Consider all samples as potentially hazardous

SAMPLE NO.	DATE	TIME	COMP	GRAB	LOCATION	MATRIX	NUMBER OF CONTAINERS	ANALYTICAL TESTS REQUESTED* SW-846 8260	SW-846 8270	SW-846 8280	SW-846 6010	EPA 310.1/EPA 300	EPA 415.1	REMARKS
A2-22-23	17 Jul 97	1320		X	Verona OU-2	aqueous	1-40ml	X						7 day turnaround
A4-19-21	"	1550		X		"	1-40ml	X						"
A7-12.6-19	"	1145		X		"	1-40ml	X						"
B4-35-37	"	1710		X		"	2-40ml	X						"
B5-38-40	"	2025		X		"	2-40ml	X						"

RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)
R. Scott Barton	21 Jul 97	1600	[illegible] 7-22-97 1000

RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)

*Analytical Test Description

SW-846 8240	Volatile Organics
SW-846 8270	Semivolatile Organics
SW-846 8280	2378-TCDD
SW-846 6010	Metals (Sb, As, Ba, Ca, Cr, Fe, Pb, Mg, Mn, Se, Na)
EPA 310.1	Alkalinity
EPA 300	Chloride, Nitrate, Sulfate
EPA 415.1	Total Organic Carbon

SAMPLER: (Signature)

19

SAMPLE LOG-IN SHEET

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA Page 1 of 1

Received By (Print Name): KIM WILLISON/MATT MCCOMBER Log-in Date: 7-22-97

Received By: (Signature): Willison

Case Number: _____

Sample Delivery Group No: _____

SAS Number: _____

REMARKS:

1. Custody Seal(s) — (Present)/Absent* / (Intact)/Broken
2. Custody Seal Nos.: M
3. Chain-of-Custody Records — (Present)/Absent*
4. Traffic Reports or Packing List — Present/(Absent)*
5. Airbill — (Airbill)/Sticker Present/Absent*
5. Airbill No: 0641870725
7. Sample Tags — Present/(Absent)
   Sample Tag Numbers — Listed/Not Listed on Chain-of-Custody
8. Sample Condition: (Intact)/Broken*/ Leaking
9. Does information on custody records, traffic reports, and sample tags agree? (Yes)/No*
10. Date Received at Lab: 7-22-97
11. Time Received: _____

Sample Transfer

Fraction: _____ _____

Area #: _____ _____

By: _____ _____

On: _____ _____

	CORRESPONDING		
EPA SAMPLE #	SAMPLE TAG #	ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC.
A2-22-23		30208.01	INTACT 19°
A4-19-21		-02	
A7-17.5-19		-03	
B4-35-37		-04	
B5-38-40		-05	
	T		

* Contact SMO and attach record of resolution

Received By: _____

Date: _____

Logbook No: _____

Logbook Page No: _____

SOUTHWEST LABORATORY OF OKLAHOMA, INC.
1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: Syntex Agribusiness

METHODOLOGY

SM = Standard Methods, 16th Edition, 1985

EPA = #EPA600/4-79-020, March 1983

SW = EPA Methodology, "#SW846", 3rd Edition, July, 1992

GENERAL QUALIFIER FLAGS

B - Analyte is detected in blank as well as sample.

E - Estimated value: concentration is below limit of quantitation

U - Not detected above quantitation limit

A - Compound exceeds calibration range

D - Surrogates or matrix diluted out sample run at secondary dilution

* - Surrogate outside of QC limits

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QAQC Sequence List Date: 07/30/1997 Time: 16:06 Page 1

Client: SYNTEX AGRIBUSINESS, INC. Project: VERONA

QAQC SEQ	LABNUM	SAMPLE	TYPE	TEST	RUN CODE	EXTRACTED	ANALYZED
N970723A		VBLK1	LB1	MS300		/ /	07/23/97
N970723A		VLCS1	BS1	MS300		/ /	07/23/97
N970723A		VLCSD1	BD1	MS300		/ /	07/23/97
N970723A	30208.01	A2-22-23		MS300		/ /	07/23/97
N970723A	30208.03	A7-17.5-19		MS300		/ /	07/23/97
N970723A	30208.05	B5-38-40		MS300		/ /	07/23/97
R970724A		VBLK2	LB1	MS300		/ /	07/24/97
R970724A		VLCS2	BS1	MS300		/ /	07/24/97
R970724A		VLCSD2	BD1	MS300		/ /	07/24/97
R970724A	30208.02	A4-19-21		MS300		/ /	07/24/97
R970724A	30208.04	B4-35-37		MS300		/ /	07/24/97

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SYNTEX AGRIBUSINESS, INC.
ENVIRONMENTAL PROJ. DEPT.
POST OFFICE BOX 1246
SPRINGFIELD, MO 65801
Attn: SCOTT BARTON

REPORT: 30208.01

DATE: 07/30/97

SWLO # : 30208.01
SAMPLE #: A2-22-23
SAMPLE MATRIX : WATER
PROJECT : VERONA
LOCATION:
METHOD REFERENCE: SW 8260

DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE SAMPLED : 07/17/97
DATE RECEIVED : 07/22/97
DATE PREPARED :
DATE ANALYZED : 07/23/97
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	1,2-DICHLOROPROPANE	5	U
BROMOMETHANE	10	U	TRANS-1,3-DICHLOROPROPENE	5	U
VINYL CHLORIDE	10	U	TRICHLOROETHENE	5	U
CHLOROETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
METHYLENE CHLORIDE	5	U	1,1,2-TRICHLOROETHANE	5	U
ACETONE	10	U	BENZENE	5	U
CARBON DISULFIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
1,1-DICHLOROETHENE	5	U	2-CHLOROETHYL VINYL ETHER	10	U
1,1-DICHLOROETHANE	5	U	BROMOFORM	5	U
1,2-DICHLOROETHENE(TOTAL)	5	U	2-HEXANONE	10	U
CHLOROFORM	5	U	4-METHYL-2-PENTANONE	10	U
1,2-DICHLOROETHANE	5	U	TETRACHLOROETHENE	5	U
2-BUTANONE	10	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	XYLENE (TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	103%	BROMOFLUOROBENZENE	(86-115)	96%
1,2-DICHLOROETHANE-D4	(76-114)	94%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SYNTEX AGRIBUSINESS, INC.
ENVIRONMENTAL PROJ. DEPT.
POST OFFICE BOX 1246
SPRINGFIELD, MO 65801
Attn: SCOTT BARTON

REPORT: 30208.02

DATE: 07/30/97

SWLO # : 30208.02
SAMPLE #: A4-19-21
SAMPLE MATRIX : SOIL
PROJECT : VERONA
LOCATION:
METHOD REFERENCE: SW 8260

DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE SAMPLED : 07/17/97
DATE RECEIVED : 07/22/97
DATE PREPARED :
DATE ANALYZED : 07/24/97
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/Kg ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	33	U	1,2-DICHLOROPROPANE	17	U
BROMOMETHANE	33	U	TRANS-1,3-DICHLOROPROPENE	17	U
VINYL CHLORIDE	33	U	TRICHLOROETHENE	17	U
CHLOROETHANE	33	U	DIBROMOCHLOROMETHANE	17	U
METHYLENE CHLORIDE	17	B	1,1,2-TRICHLOROETHANE	17	U
ACETONE	120		BENZENE	17	U
CARBON DISULFIDE	17	U	CIS-1,3-DICHLOROPROPENE	17	U
1,1-DICHLOROETHENE	17	U	2-CHLOROETHYL VINYL ETHER	33	U
1,1-DICHLOROETHANE	17	U	BROMOFORM	17	U
1,2-DICHLOROETHENE(TOTAL)	17	U	2-HEXANONE	33	U
CHLOROFORM	17	U	4-METHYL-2-PENTANONE	33	U
1,2-DICHLOROETHANE	17	U	TETRACHLOROETHENE	17	U
2-BUTANONE	33	U	TOLUENE	17	U
1,1,1-TRICHLOROETHANE	17	U	CHLOROBENZENE	17	U
CARBON TETRACHLORIDE	17	U	ETHYLBENZENE	17	U
VINYL ACETATE	33	U	STYRENE	17	U
BROMODICHLOROMETHANE	17	U	XYLENE (TOTAL)	17	U
1,1,2,2-TETRACHLOROETHANE	17	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	104%	BROMOFLUOROBENZENE	(74-121)	87%
1,2-DICHLOROETHANE-D4	(70-121)	88%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SYNTEX AGRIBUSINESS, INC.
ENVIRONMENTAL PROJ. DEPT.
PO BOX 1246
SPRINGFIELD, MO 65801
Attn: SCOTT BARTON

REPORT: 30208.03

DATE: 07/30/97

SWLO # : 30208.03
SAMPLE #: A7-17.5-19
SAMPLE MATRIX : WATER
PROJECT : VERONA
LOCATION:
METHOD REFERENCE: SW 8260

DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE SAMPLED : 07/17/97
DATE RECEIVED : 07/22/97
DATE PREPARED :
DATE ANALYZED : 07/23/97
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	1,2-DICHLOROPROPANE	5	U
BROMOMETHANE	10	U	TRANS-1,3-DICHLOROPROPENE	5	U
VINYL CHLORIDE	10	U	TRICHLOROETHENE	5	U
CHLOROETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
METHYLENE CHLORIDE	5	U	1,1,2-TRICHLOROETHANE	5	U
ACETONE	39		BENZENE	5	U
CARBON DISULFIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
1,1-DICHLOROETHENE	5	U	2-CHLOROETHYL VINYL ETHER	10	U
1,1-DICHLOROETHANE	5	U	BROMOFORM	5	U
1,2-DICHLOROETHENE(TOTAL)	5	U	2-HEXANONE	10	U
CHLOROFORM	5	U	4-METHYL-2-PENTANONE	7	E
1,2-DICHLOROETHANE	5	U	TETRACHLOROETHENE	5	U
2-BUTANONE	10	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	XYLENE (TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	103%	BROMOFLUOROBENZENE	(86-115)	95%
1,2-DICHLOROETHANE-D4	(76-114)	95%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SYNTEX AGRIBUSINESS, INC.
ENVIRONMENTAL PROJ. DEPT.
POST OFFICE BOX 1246
SPRINGFIELD, MO 65801
Attn: SCOTT BARTON

REPORT: 30208.04

DATE: 07/30/97

SWLO # : 30208.04
SAMPLE #: B4-35-37
SAMPLE MATRIX : SOIL
PROJECT : VERONA
LOCATION:
METHOD REFERENCE: SW 8260

DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE SAMPLED : 07/17/97
DATE RECEIVED : 07/22/97
DATE PREPARED :
DATE ANALYZED : 07/24/97
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/Kg ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	31	U	1,2-DICHLOROPROPANE	16	U
BROMOMETHANE	31	U	TRANS-1,3-DICHLOROPROPENE	16	U
VINYL CHLORIDE	31	U	TRICHLOROETHENE	16	U
CHLOROETHANE	31	U	DIBROMOCHLOROMETHANE	16	U
METHYLENE CHLORIDE	12	EB	1,1,2-TRICHLOROETHANE	16	U
ACETONE	59		BENZENE	16	U
CARBON DISULFIDE	16	U	CIS-1,3-DICHLOROPROPENE	16	U
1,1-DICHLOROETHENE	16	U	2-CHLOROETHYL VINYL ETHER	31	U
1,1-DICHLOROETHANE	16	U	BROMOFORM	16	U
1,2-DICHLOROETHENE(TOTAL)	16	U	2-HEXANONE	31	U
CHLOROFORM	16	U	4-METHYL-2-PENTANONE	31	U
1,2-DICHLOROETHANE	16	U	TETRACHLOROETHENE	16	U
2-BUTANONE	31	U	TOLUENE	16	U
1,1,1-TRICHLOROETHANE	16	U	CHLOROBENZENE	69	
CARBON TETRACHLORIDE	16	U	ETHYLBENZENE	16	U
VINYL ACETATE	31	U	STYRENE	16	U
BROMODICHLOROMETHANE	16	U	XYLENE (TOTAL)	16	U
1,1,2,2-TETRACHLOROETHANE	16	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	98%	BROMOFLUOROBENZENE	(74-121)	88%
1,2-DICHLOROETHANE-D4	(70-121)	87%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SYNTEX AGRIBUSINESS, INC.
ENVIRONMENTAL PROJ. DEPT.
POST OFFICE BOX 1246
SPRINGFIELD, MO 65801
Attn: SCOTT BARTON

REPORT: 30208.05

DATE: 07/30/97

SWLO # : 30208.05
SAMPLE #: B5-38-40
SAMPLE MATRIX : WATER
PROJECT : VERONA
LOCATION:
METHOD REFERENCE: SW 8260

DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE SAMPLED : 07/17/97
DATE RECEIVED : 07/22/97
DATE PREPARED :
DATE ANALYZED : 07/23/97
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	1,2-DICHLOROPROPANE	5	U
BROMOMETHANE	10	U	TRANS-1,3-DICHLOROPROPENE	5	U
VINYL CHLORIDE	10	U	TRICHLOROETHENE	5	U
CHLOROETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
METHYLENE CHLORIDE	5	U	1,1,2-TRICHLOROETHANE	5	U
ACETONE	10	U	BENZENE	2	E
CARBON DISULFIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
1,1-DICHLOROETHENE	5	U	2-CHLOROETHYL VINYL ETHER	10	U
1,1-DICHLOROETHANE	5	U	BROMOFORM	5	U
1,2-DICHLOROETHENE(TOTAL)	5	U	2-HEXANONE	10	U
CHLOROFORM	5	U	4-METHYL-2-PENTANONE	10	U
1,2-DICHLOROETHANE	5	U	TETRACHLOROETHENE	5	U
2-BUTANONE	10	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	62	
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	XYLENE (TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	102%	BROMOFLUOROBENZENE	(86-115)	94%
1,2-DICHLOROETHANE-D4	(76-114)	93%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SYNTEX AGRIBUSINESS, INC.
ENVIRONMENTAL PROJ. DEPT.
POST OFFICE BOX 1246
SPRINGFIELD, MO 65801
Attn: SCOTT BARTON

REPORT:

DATE: 07/30/97

SWLO QAQC#: N970723A
SAMPLE #: VBLK1 LB1
SAMPLE MATRIX : WATER
PROJECT : VERONA
LOCATION: LAB QC
METHOD REFERENCE: SW 8260

DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE SAMPLED : 07/23/97
DATE RECEIVED : 07/23/97
DATE PREPARED :
DATE ANALYZED : 07/23/97
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	1,2-DICHLOROPROPANE	5	U
BROMOMETHANE	10	U	TRANS-1,3-DICHLOROPROPENE	5	U
VINYL CHLORIDE	10	U	TRICHLOROETHENE	5	U
CHLOROETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
METHYLENE CHLORIDE	5	U	1,1,2-TRICHLOROETHANE	5	U
ACETONE	10	U	BENZENE	5	U
CARBON DISULFIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
1,1-DICHLOROETHENE	5	U	2-CHLOROETHYL VINYL ETHER	10	U
1,1-DICHLOROETHANE	5	U	BROMOFORM	5	U
1,2-DICHLOROETHENE(TOTAL)	5	U	2-HEXANONE	10	U
CHLOROFORM	5	U	4-METHYL-2-PENTANONE	10	U
1,2-DICHLOROETHANE	5	U	TETRACHLOROETHENE	5	U
2-BUTANONE	10	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	XYLENE (TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	102%	BROMOFLUOROBENZENE	(86-115)	96%
1,2-DICHLOROETHANE-D4	(76-114)	95%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

SYNTEX AGRIBUSINESS, INC.
ENVIRONMENTAL PROJ. DEPT.
POST OFFICE BOX 1246
SPRINGFIELD, MO 65801
Attn: SCOTT BARTON

REPORT:

DATE: 07/30/97

PROJECT : VERONA
PREPARED: / /
SAMPLE : VBLK1
SPIKE SAMPLE : VLCS1
SPIKE DUP SAMPLE: VLCSD1

SAMPLE MATRIX : WATER
ANALYZED: 07/23/97

VOLATILE ORGANIC COMPOUNDS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter	(ug/l)	SPIKE AMOUNT	SAMPLE CONC.	SPIKE CONC.	SPIKE %Rec	SPIKE DUP.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
CHLOROMETHANE		50	0	46	92	44	88	4.44	0	0- 0
BROMOMETHANE		50	0	47	94	46	92	2.15	0	0- 0
VINYL CHLORIDE		50	0	44	88	42	84	4.65	0	0- 0
CHLOROETHANE		50	0	48	96	45	90	6.45	0	0- 0
METHYLENE CHLORIDE		50	0	48	96	48	96	< 1	0	0- 0
ACETONE		50	0	42	84	41	82	2.41	0	0- 0
CARBON DISULFIDE		50	0	45	90	43	86	4.55	0	0- 0
1,1-DICHLOROETHENE		50	0	46	92	44	88	4.44	14	61-145
1,1-DICHLOROETHANE		50	0	48	96	46	92	4.26	0	0- 0
TRANS-1,2-DICHLOROETHE		50	0	47	94	46	92	2.15	0	0- 0
CIS-1,2-DICHLOROETHENE		50	0	47	94	46	92	2.15	0	0- 0
CHLOROFORM		50	0	48	96	47	94	2.11	0	0- 0
1,2-DICHLOROETHANE		50	0	49	98	48	96	2.06	0	0- 0
2-BUTANONE		50	0	44	88	45	90	2.25	0	0- 0
1,1,1-TRICHLOROETHANE		50	0	47	94	44	88	6.59	0	0- 0
CARBON TETRACHLORIDE		50	0	48	96	43	86	10.9	0	0- 0
VINYL ACETATE		50	0	46	92	44	88	4.44	0	0- 0
BROMODICHLOROMETHANE		50	0	48	96	46	92	4.26	0	0- 0
1,1,2,2-TETRACHLOROETH		50	0	48	96	45	90	6.45	0	0- 0
1,2-DICHLOROPROPANE		50	0	48	96	47	94	2.11	0	0- 0
TRANS-1,3-DICHLOROPROP		50	0	49	98	46	92	6.32	0	0- 0
TRICHLOROETHENE		50	0	47	94	44	88	6.59	14	71-120
DIBROMOCHLOROMETHANE		50	0	47	94	45	90	4.35	0	0- 0
1,1,2-TRICHLOROETHANE		50	0	47	94	46	92	2.15	0	0- 0
BENZENE		50	0	47	94	45	90	4.35	11	76-127
CIS-1,3-DICHLOROPROPEN		50	0	48	96	45	90	6.45	0	0- 0
2-CHLOROETHYL VINYL ET		50	0	48	96	46	92	4.26	0	0- 0
BROMOFORM		50	0	46	92	43	86	6.74	0	0- 0
2-HEXANONE		50	0	50	100	47	94	6.19	0	0- 0
4-METHYL-2-PENTANONE		50	0	48	96	47	94	2.11	0	0- 0
TETRACHLOROETHENE		50	0	48	96	46	92	4.26	0	0- 0
TOLUENE		50	0	48	96	46	92	4.26	13	76-125
CHLOROBENZENE		50	0	48	96	45	90	6.45	13	75-130

* = VALUES OUTSIDE OF QC LIMITS

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SYNTEX AGRIBUSINESS, INC.
ENVIRONMENTAL PROJ. DEPT.
POST OFFICE BOX 1246
SPRINGFIELD, MO 65801
Attn: SCOTT BARTON

REPORT:

DATE: 07/30/97

PROJECT : VERONA
PREPARED: / /
SAMPLE : VBLK1
SPIKE SAMPLE : VLCS1
SPIKE DUP SAMPLE: VLCSD1

SAMPLE MATRIX : WATER
ANALYZED: 07/23/97

VOLATILE ORGANIC COMPOUNDS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter	(ug/l)	SPIKE AMOUNT	SAMPLE CONC.	SPIKE CONC.	SPIKE %Rec	SPIKE DUP.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
ETHYLBENZENE		50	0	48	96	45	90	6.45	0	0- 0
STYRENE		50	0	48	96	45	90	6.45	0	0- 0
M,P-XYLENE		100	0	94	94	88	88	6.59	0	0- 0
O-XYLENE		50	0	47	94	44	88	6.59	0	0- 0

QA/QC Surrogates

Parameter	SPK %Rec	DUP %Rec	LIMITS
TOLUENE-D8	103	104	88-110
BROMOFLUOROBENZENE	99	99	86-115
1,2-DICHLOROETHANE-D4	98	100	76-114

* = VALUES OUTSIDE OF QC LIMITS

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ENVIRONMENTAL PROJ. DEPT.
POST OFFICE BOX 1246
SPRINGFIELD, MO 65801
Attn: SCOTT BARTON

REPORT:

DATE: 07/30/97

SWLO QAQC#: R970724A
SAMPLE #: VBLK2 LB1
SAMPLE MATRIX : SOIL
PROJECT : VERONA
LOCATION: LAB QC
METHOD REFERENCE: SW 8260

DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE SAMPLED : 07/24/97
DATE RECEIVED : 07/24/97
DATE PREPARED :
DATE ANALYZED : 07/24/97
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/Kg ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	1,2-DICHLOROPROPANE	5	U
BROMOMETHANE	10	U	TRANS-1,3-DICHLOROPROPENE	5	U
VINYL CHLORIDE	10	U	TRICHLOROETHENE	5	U
CHLOROETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
METHYLENE CHLORIDE	5		1,1,2-TRICHLOROETHANE	5	U
ACETONE	10	U	BENZENE	5	U
CARBON DISULFIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
1,1-DICHLOROETHENE	5	U	2-CHLOROETHYL VINYL ETHER	10	U
1,1-DICHLOROETHANE	5	U	BROMOFORM	5	U
1,2-DICHLOROETHENE(TOTAL)	5	U	2-HEXANONE	10	U
CHLOROFORM	5	U	4-METHYL-2-PENTANONE	10	U
1,2-DICHLOROETHANE	5	U	TETRACHLOROETHENE	5	U
2-BUTANONE	10	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	XYLENE (TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	101%	BROMOFLUOROBENZENE	(74-121)	96%
1,2-DICHLOROETHANE-D4	(70-121)	97%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT:

DATE: 07/30/97

PROJECT : VERONA
PREPARED: / /
SAMPLE : VBLK2
SPIKE SAMPLE : VLCS2
SPIKE DUP SAMPLE: VLCSD2

SAMPLE MATRIX : SOIL
ANALYZED: 07/24/97

VOLATILE ORGANIC COMPOUNDS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter (ug/Kg)	SPIKE AMOUNT	SAMPLE CONC.	SPIKE CONC.	SPIKE %Rec	SPIKE DUP.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
CHLOROMETHANE	50	0	35	70	0	0*	200	* 21	59-139
BROMOMETHANE	50	0	23	46*	0	0*	200	* 21	60-133
VINYL CHLORIDE	50	0	36	72	0	0	200	0	0- 0
CHLOROETHANE	50	0	33	66	0	0*	200	* 21	59-139
METHYLENE CHLORIDE	50	5	50	90	0	-10*	200	* 21	59-139
ACETONE	50	0	36	72	0	0*	200	* 21	66-142
CARBON DISULFIDE	50	0	45	90	0	0*	200	* 21	60-133
1,1-DICHLOROETHENE	50	0	41	82	0	0*	200	* 22	59-172
1,1-DICHLOROETHANE	50	0	44	88	0	0*	200	* 22	59-172
TRANS-1,2-DICHLOROETHE	50	0	43	86	0	0*	200	* 24	62-137
CIS-1,2-DICHLOROETHENE	50	0	48	96	0	0*	200	* 21	59-139
CHLOROFORM	50	0	50	100	0	0*	200	* 21	59-139
1,2-DICHLOROETHANE	50	0	44	88	0	0*	200	* 21	66-142
2-BUTANONE	50	0	54	108	0	0*	200	* 21	66-142
1,1,1-TRICHLOROETHANE	50	0	51	102	0	0*	200	* 22	59-172
CARBON TETRACHLORIDE	50	0	44	88	0	0*	200	* 21	60-133
VINYL ACETATE	50	0	49	98	0	0	200	0	0- 0
BROMODICHLOROMETHANE	50	0	52	104	0	0*	200	* 21	60-133
1,1,2,2-TETRACHLOROETH	50	0	56	112	0	0*	200	* 22	59-172
1,2-DICHLOROPROPANE	50	0	52	104	0	0*	200	* 21	66-142
TRANS-1,3-DICHLOROPROP	50	0	53	106	0	0*	200	* 24	62-137
TRICHLOROETHENE	50	0	51	102	0	0*	200	* 24	62-137
DIBROMOCHLOROMETHANE	50	0	53	106	0	0*	200	* 21	59-139
1,1,2-TRICHLOROETHANE	50	0	53	106	0	0*	200	* 22	59-172
BENZENE	50	0	47	94	0	0*	200	* 21	66-142
CIS-1,3-DICHLOROPROPEN	50	0	52	104	0	0*	200	* 21	59-139
2-CHLOROETHYL VINYL ET	50	0	56	112	0	0*	200	* 21	66-142
BROMOFORM	50	0	55	110	0	0*	200	* 21	60-133
2-HEXANONE	50	0	49	98	0	0*	200	* 21	66-142
4-METHYL-2-PENTANONE	50	0	56	112	0	0*	200	* 21	66-142
TETRACHLOROETHENE	50	0	52	104	0	0*	200	* 21	59-139
TOLUENE	50	0	51	102	0	0*	200	* 21	59-139
CHLOROBENZENE	50	0	51	102	0	0*	200	* 21	60-133

* = VALUES OUTSIDE OF QC LIMITS

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REPORT:

DATE: 07/30/97

PROJECT : VERONA
PREPARED: / /
SAMPLE : VBLK2
SPIKE SAMPLE : VLCS2
SPIKE DUP SAMPLE: VLCSD2

SAMPLE MATRIX : SOIL
ANALYZED: 07/24/97

VOLATILE ORGANIC COMPOUNDS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter	(ug/Kg)	SPIKE AMOUNT	SAMPLE CONC.	SPIKE CONC.	SPIKE %Rec.	SPIKE DUP.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
ETHYLBENZENE		50	0	52	104	0	0*	200 *	21	59-139
STYRENE		50	0	51	102	0	0*	200 *	21	59-139
M,P-XYLENE		100	0	100	100	0	0*	200 *	21	59-139
O-XYLENE		50	0	52	104	0	0*	200 *	21	59-139

QA/QC Surrogates

Parameter	SPK %Rec	DUP %Rec	LIMITS
TOLUENE-D8	100	0*	81-117
BROMOFLUOROBENZENE	102	0*	74-121
1,2-DICHLOROETHANE-D4	78	0*	70-121

* = VALUES OUTSIDE OF QC LIMITS